

US007853900B2

(12) United States Patent

Nguyen et al.

(10) Patent No.: US 7,853,900 B2 (45) Date of Patent: Dec. 14, 2010

(54) ANIMATIONS (75) Inventors: Laurent An Minh Nguyen, Los Altos,

CA (US); Mitchell A. Yawitz, Belmont,

CA (US)

(73) Assignee: Amazon Technologies, Inc., Reno, NV

(US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 791 days.

(21) Appl. No.: 11/763,343

(22) Filed: Jun. 14, 2007

(65) Prior Publication Data

US 2008/0295039 A1 Nov. 27, 2008

Related U.S. Application Data

- (60) Provisional application No. 60/939,357, filed on May 21, 2007.
- (51) Int. Cl. G06F 3/048 (2006.01)

(56) References Cited

U.S. PATENT DOCUMENTS

5,339,391 A * 8/19	994 W	roblewski et al 345/607
5,553,225 A * 9/19	996 Pe	erry 715/786
5,566,098 A 10/19	996 Li	ucente et al.
5,663,748 A 9/19	97 H	uffman et al.
5,710,922 A 1/19	998 A	lley et al.
5,761,485 A 6/19	98 M	lunyan
5,765,168 A 6/19	998 B	urrows
5,784,056 A * 7/19	998 N	ielsen 715/856

5,801,698	A	*	9/1998	Lection et al	715/861
5,847,698	A		12/1998	Reavey et al.	
5,892,900	A		4/1999	Ginter et al.	
5,898,432	A	*	4/1999	Pinard	715/861
5,900,872	A	*	5/1999	Ashe	715/786

(Continued)

FOREIGN PATENT DOCUMENTS

WO WO9720274 6/1997

(Continued)

OTHER PUBLICATIONS

Solaris User Guide, 1994, Sun Microsystems, 481-508.*

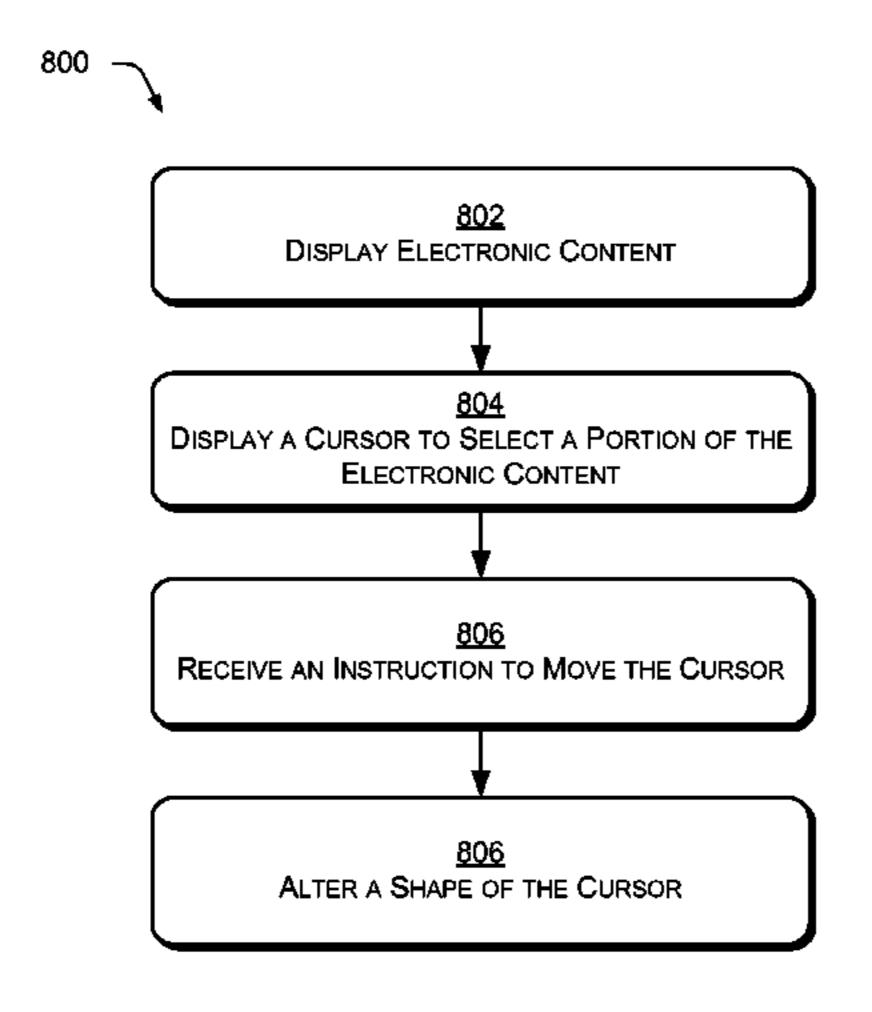
(Continued)

Primary Examiner—Tadeese Hailu Assistant Examiner—Nicholas S Ulrich (74) Attorney, Agent, or Firm—Lee & Hayes, PLLC

(57) ABSTRACT

Animations enhance viewing and consumption of electronic items that are presented to a user on a screen of a computing device. These animations may occur in response to receiving an instruction to move a position of a cursor displayed on the screen of the computing device. A user may trigger this instruction, for instance, by selecting a portion of the electronic content with use of the cursor. In response to the selection, the cursor or some other entity may undergo some form of animation. This animation may notify the user that the selection is being processed, and may also indicate a future position of the cursor at a time after the selection is processed.

26 Claims, 22 Drawing Sheets



	U.S. I	PATENT	DOCUMENTS	2004/0268253	A1	12/2004	DeMello et al.
5.056.049		0/1000	Castan	2005/0022113			
5,956,048			Hartman et al.	2005/0044148			
, ,			Wicher et al 345/3.1	2005/0044224 2005/0088410			Jun et al. Chaudhri
, ,			Yun et al.	2005/0088410			Inui
6,097,390	A *	8/2000	Marks 715/772	2005/0176438		8/2005	
, ,			Little et al 715/784	2005/0193330		9/2005	Peters
6,313,828				2005/0198070		9/2005	-
, ,			Eberhard et al. Duga et al.	2005/0222977			Zhou et al.
·			Wiser et al.	2005/0256822			Hollingsworth Rast
			Baer et al.	2006/0020469			
6,529,920	B1	3/2003	Arons et al.	2006/0075205			
			Wagner et al 715/784	2006/0098900			King et al.
ŕ			Wentt	2006/0129618		6/2006	
·			Feierbach	2006/0161635			Lamkin et al.
·			Bjarnestam et al.	2006/0179137			Jennings, III et al.
			Tiongson et al 715/787	2006/0190568 2006/0256083			Patterson Rosenberg
·			Laffey et al 715/861	2006/0281058			Mangoaela
•			Sommer et al.	2007/0050346			•
ŕ			Quinones	2007/0061335	A1	3/2007	Ramer et al.
			Lilienthal Claser et el	2007/0118533			Ramer et al.
7,007,015			Glaser et al.	2007/0174545			
7,007,013			Seet et al.	2007/0219983			Hoeber et al.
7,020,654				2007/0282809			Kleewein et al.
· ·			Keely et al 715/776	2008/0082518			Loftesness
			Barsness et al.	2008/0133479			Zelevinsky et al.
			Dieberger et al 715/764	2008/0163039	A1	7/2008	Ryan et al.
, ,			Frid-Nielsen et al.	2008/0168073			Siegel et al.
·			Fagin et al. Eriksson et al.	2008/0208833			Basmov
, ,			Fukatsu et al 715/711	2008/0243788			Reztlaff, II et al.
, ,			Hendricks et al.	2008/0243828			Reztlaff, II et al. Ryan et al
, ,			Seet et al.				Reztlaff, II et al.
, ,			Barsness et al 235/435				, ,
·			Sugimoto	FC	REIC	N PATE	NT DOCUMENTS
, ,			Hendricks et al. Inui	WO W	/O004	5588	8/2000
			Bathiche et al 345/184		O003		5/2002
, ,			Whitehorn et al D14/346				
·			Jennings et al 715/786		OT	HER PUI	BLICATIONS
,			Whitehorn et al D14/346	IIC A1 NI-	11/50	7 404 £1.	d C., 20 2006 Th., D.,
			Ishibashi et al. Pustejovsky et al.				ed Sep. 29, 2006, Thomas Ryan, ital Item Following a Sample Pre-
2001/003/328			Aggarwal et al.	sentation of the	•	•	itai item ronowing a Sample i ie-
2002/0010759			Hitson et al.	U.S. Appl. No.	11/53	37,518, file	ed Sep. 29, 2006, John Lattyak,
2002/0035697	A1	3/2002	McCurdy et al.	"Acquisition of	an Iter	n based on	a Catalog Presentation of Items."
2002/0092031			Dudkiewicz et al.	.			Mar. 29, 2007, John Lattyak; John
2002/0103809			Starzl et al.	·		rent An Mi	nh Nguyen, "Relative Progress and
2002/0129012		9/2002	Vaidyanathan et al.	Event Indicators		314 filed	Jun. 14, 2007, John Lattyak; Craig
2002/0138291			Fries et al.			•	Dependent Markup Language."
2002/0186252			Himmel et al 345/787	· ·	·		ed Jun. 14, 2007, David Isbister;
2003/0020671	A1*	1/2003	Santoro et al 345/1.3			•	ccaro, "Power Management Tech-
2003/0028395			Rodgers et al.	niques for a Use	r Devi	ce."	
2003/0040970		2/2003					Jun. 14, 2007, James Reztlaff II;
2003/0046233			Ara et al. Yuen et al.	•		•	rifying Search Indices."
2003/0009812			Finlay et al.	1 1		,	Jun. 14, 2007, James Reztlaff II;
2003/0110503		6/2003		•			Generation and Sorting." Jun. 14, 2007, John Lattyak, Girish
2003/0163399			Harper et al.	1.1		•	Thomas Fruchterman, Robert L.
2003/0164844			Kravitz et al.	5 5 .		•	hard Moore, Subram Narasimhan,
2003/0182551	$\mathbf{A}1$		Frantz et al.	Thomas A. Ryan	n, Mic	hael V. Ry	kov, Jon Saxton, James C. Slezak,
/DMY2200		1/2004	Donian et al.	Bervl Tomay, Av	iram Z	Zagorie, Gr	egg Elliott Zehr, "Delivery of Items
						_	-
2004/0044723	A 1	3/2004	Bell et al.	for Consumption	n by a	User Devi	ce."
2004/0044723 2004/0085364	A1 A1*	3/2004 5/2004	Bell et al. Keely et al 345/804	for Consumption U.S. Appl. No.	n by a 11/76	User Devid 3,376, file	d Jun. 14, 2007, Kenneth Kiraly;
2004/0003398 2004/0044723 2004/0085364 2004/0117189 2004/0139400	A1 A1* A1	3/2004 5/2004 6/2004	Bell et al. Keely et al	for Consumption U.S. Appl. No. Thomas Ryan;	n by a 11/76 Gregg	User Devid 3,376, file Zehr; Joh	ce." d Jun. 14, 2007, Kenneth Kiraly; n Lattyak; Michael Rykov; Girish
2004/0044723 2004/0085364 2004/0117189 2004/0139400	A1 A1* A1 A1	3/2004 5/2004 6/2004 7/2004	Bell et al. Keely et al 345/804	for Consumption U.S. Appl. No. Thomas Ryan; Bansilal Bajaj;	n by a 11/76 Gregg James	User Devid 3,376, file Zehr; John Selzak;	d Jun. 14, 2007, Kenneth Kiraly; n Lattyak; Michael Rykov; Girish Aviram Zagorie; Richard Moore;
2004/0044723 2004/0085364	A1 A1 A1 A1	3/2004 5/2004 6/2004 7/2004 10/2004	Bell et al. Keely et al	for Consumption U.S. Appl. No. Thomas Ryan; Bansilal Bajaj;	n by a 11/76 Gregg James Thoma	User Devices 3,376, file Zehr; Johns Selzak; as Fruchter	d Jun. 14, 2007, Kenneth Kiraly; n Lattyak; Michael Rykov; Girish Aviram Zagorie; Richard Moore; rman; Robert Goodwin, "Notifica-

U.S. Appl. No. 11/763,378, filed Jun. 14, 2007, John Lattyak; Thomas Ryan; Gregg Zehr; Kenneth Kiraly; Michael Rykov; Girish Bansilal Bajaj; James Slezak; Aviram Zagorie; Richard Moore; Kevin Cheung; Thomas Fruchterman; Robert Goodwin; Xiaotian Guo, "Transfer of Instructions to a User Device."

U.S. Appl. No. 11/763,381, filed Jun. 14, 2007, Michael Rykov; Girish Bansilal Bajaj; James Slezak; Aviram Zagorie; Richard Moore; Kevin Cheung; Thomas Fruchterman; Robert Goodwin, "Selecting and Providing Items in a Media Consumption System." U.S. Appl. No. 11/763,386, filed Jun. 14, 2007, Thomas Ryan; Gregg Zehr; Kenneth Kiraly; John Lattyak; Michael Rykov; Girish Bansilal Bajaj; James Slezak; Aviram Zagorie; Richard Moore; Kevin Cheung; Thomas Fruchterman; Robert Goodwin, "Handling of Sub-

scription-Related Issues in a Media Consumption System."
U.S. Appl. No. 11/763,390, filed Jun. 14, 2007, Girish Bansilal Bajaj;
Michael Rykov; James Slezak; Aviram Zagorie; Richard Moore;
Kevin Cheung; Thomas Fruchterman; Robert Goodwin,, "Providing

User-Supplied Items to a User Device."
U.S. Appl. No. 11/763,392, filed Jun. 14, 2007, Thomas Ryan; Gregg Zehr; Kenneth Kiraly; John Lattyak; Subram Narasimhan; Michael Rykov; Girish Bansilal Bajaj; James Slezak; Aviram Zagorie; Richard Moore; Kevin Cheung; Thomas Fruchterman; Robert Goodwin, "Administrative Tasks in a Media Consumption System."

U.S. Appl. No. 11/763,393, filed Jun. 14, 2007, John Lattyak; Michael Rykov; Girish Bansilal Bajaj; James Slezak; Aviram Zagorie; Richard Moore; Kevin Cheung; Thomas Fruchterman; Robert Goodwin "Incremental Updates of Items."

U.S. Appl. No. 11/763,395, filed Jun. 14, 2007, Thomas Ryan; Gregg Zehr; Kenneth Kiraly; John Lattyak; Michael Rykov; Girish Bansilal Bajaj; James Slezak; Aviram Zagorie; Richard Moore; Kevin Cheung; Thomas Fruchterman; Robert Goodwin; James Reztlaff II, "Providing Supplemental Information Based on Hints in a Media Consumption System."

U.S. Appl. No. 11/963,618, filed Dec. 21, 2007, Michael Rykov; Laurent An Minh Nguyen; Steven Moy, "Dissemination of Periodical Samples."

U.S. Appl. No. 12/333,215, filed Dec. 11, 2008, Aviram Zagorie; Craig Griffin; John Lattyak; Michael Rykov, "Device-Specific Presentation Control for Electronic Book Reader Devices."

U.S. Appl. No. 12/351,629, filed Jan. 9, 2009, John Johnston; Weiping Dou; Steven Chase, "Antenna Placement on Portable Device." U.S. Appl. No. 12/351,663, filed Jan. 9, 2009, Chris Li; Steven Chase, "Surface Mount Clip for Routing and Grounding Cables."

Cleveland, Jr. et al., "Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields" OET Bulletin 56, Fourth Edition, Aug. 1999, 38 pages.

Cleveland, Jr., et al, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" OET Bulletin 65, Edition 97-01, Aug. 1997, 84 pages.

Means, et al., "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", OET Bulletin 65 Edition 97-01, Jun. 2001, 57 pages.

OQO "A Full PC That Fits in Your Pocket" Retrieved on Sep. 22, 2008 at << http://www.oqo.com/support/documentation.html>>.

PCT Search Report for International Application No. PCT/US 08/57848, mailed Jul. 7, 2008 (9 pages).

PCT Search Report for International Application No. PCT/US 08/64387, mailed Sep. 9, 2008 (2 pages).

U.S. Appl. No. 12/360,089, filed Jan. 26, 2009, Thomas Dimson, Janna Hamaker, Eugene Kalenkovich, Tom Killalea, "Aggregation of Highlights."

U.S. Appl. No. 12/360,744, filed Jan. 27, 2009, Rajiv Kotesh Ghanta; Marcos Frid; Joseph J. Hebenstreit; John T. Kim, "Electronic Device With Haptic Feedback."

U.S. Appl. No. 12/366,941, filed Feb. 6, 2009, Scott Dixon; Eriel Thomas, "Bundled Digital Content."

U.S. Appl. No. 12/414,914, filed Mar. 31, 2009, Amit Agarwal, Zaur Kambarov; Tom Killalea, "Questions on Highlighted Passages." U.S. Appl. No. 29/331,528, filed Jan. 27, 2009, Chris Green, "User Interface Cluster."

U.S. Appl. No. 11/277,894, filed Mar. 29, 2006, Jateen P. Parekh, Gregg E. Zehr, and Subram Narasimhan, "Reader Device Content Indexing".

Bradley, "Plastic Shape Shifter", retreived on May 7, 2009 at <http://www.reactivereports.com/61/61_3.html>, Chemistry WebMagazine, Issue No. 61, Dec. 2006, 2 pgs.

Cavanaugh "EBooks and Accommodations", Teaching Expectional Children vol. 35 No. 2 pp. 56-61 Copyright 2002 CEC, pp. 56-61. Chi et al. "eBooks with Indexes that Reorganize Conceptually", CHI2004, Apr. 24-29, 2004, Vienna, Austria ACM 1-58113-703-6/04/0004, pp. 1223-1226.

Davison et al. "The Use of eBooks and Interactive Multimedia, as Alternative Forms of Technical Documentation" SIGDOC'05, Sep. 21-23, 2005, Conventry, United Kingdom, Copyright 2005 ACM 1-59593-175-9/5/0009, pp. 108-115.

Elspass, et al., "Portable Haptic Interface with Active Functional Design", In Proceedings SPIE Conference on Smart Structures and Integrated Systems, Newport Beach, California, vol. 3668, Mar. 1999, 926-932.

"Haptic History—Machine Haptics (Expansion)" retrieved on May 7, 2009 at <> from Google's cache, text-only version as webpage appeared on Apr. 16, 2009, 8 pgs.

Jones, et al., "Development of a Tactile Vest", IEEE Computer Society, In the Proceedings of the 12th International Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems, Mar. 27-28, 2004, pp. 82-89.

Leutwyler, "Shape-shifting Polymer Gels", retrieved on May 7, 2009 at <http://www.scientificamerican.com/article.cfm?id=shape-shifting-polymer-ge&print=true, Scientific American, Nov. 9, 2000, 1 pg.

Nakatani, et al., "3D Form Display with Shape Memory Alloy", in Proceedings of 13th International Conference on Artificial Reality and Teleexistence (ICAT), 2003, pp. 179-184.

"Shape Memory Polymer", retrieved on May 7, 2009 at << http://en.wikipedia.org/wiki/Shape_Memory_Polymer>>, Wikipedia, 8 pgs. Sohn et al. "Development of a Standard Format for eBooks", SAC2002, Madrid, Spain, 2002 ACM 1-58113-445-2/02/0, pp. 535-540.

Wellman, et al., "Mechanical Design and Control of a High-Bandwidth Shape Memory Alloy Tactile Display", Springer-Verlag, in the Proceedings of the International Symposium on Experimental Robotics, Barcelona, Spain, Jun. 1997, pp. 56-66, 12 pgs.

Yoshikawa, et al., "Vertical Drive Micro Actuator for Haptic Display Using Shape Memory Alloy Thin Film", IEE Japan, Papers of Technical Meeting on Micromachine and Sensor System, Journal Code L2898B, vol. MSS-05, No. 21-44, 2005, pp. 103-108.

Cafesoft.com, "Security Glossary", dated Oct. 13, 2003, retrieved from the Wayback Machine on Jul. 2, 2009 at <http://cafesoft.com/support/security-glossary.html>, 6 pages.

PCT Search Report from International Application No. PCT/US08/57829, mailed on Aug. 15, 2008, 2 pages.

PCT Search Report from International Application No. PCT/US08/64368, mailed on Sep. 22, 2008, 2 pages.

PCT Search Report from International Application No. PCT/US07/89105, mailed on Aug. 18, 2008, 4 pages.

PCT Search Report from International Application No. PCT/US08/57871, mailed on Nov. 3, 2008, 4 pages.

* cited by examiner

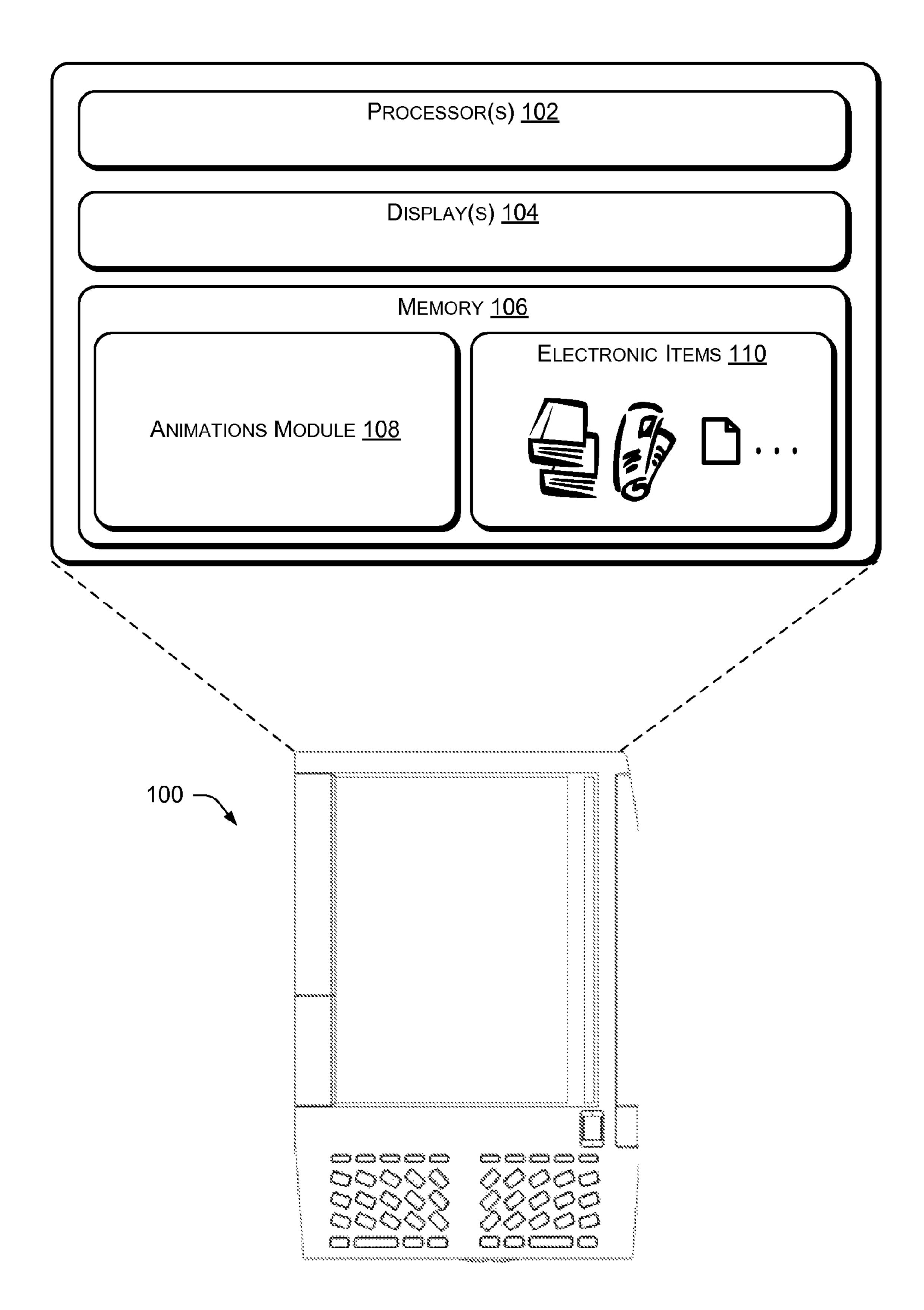


Fig. 1

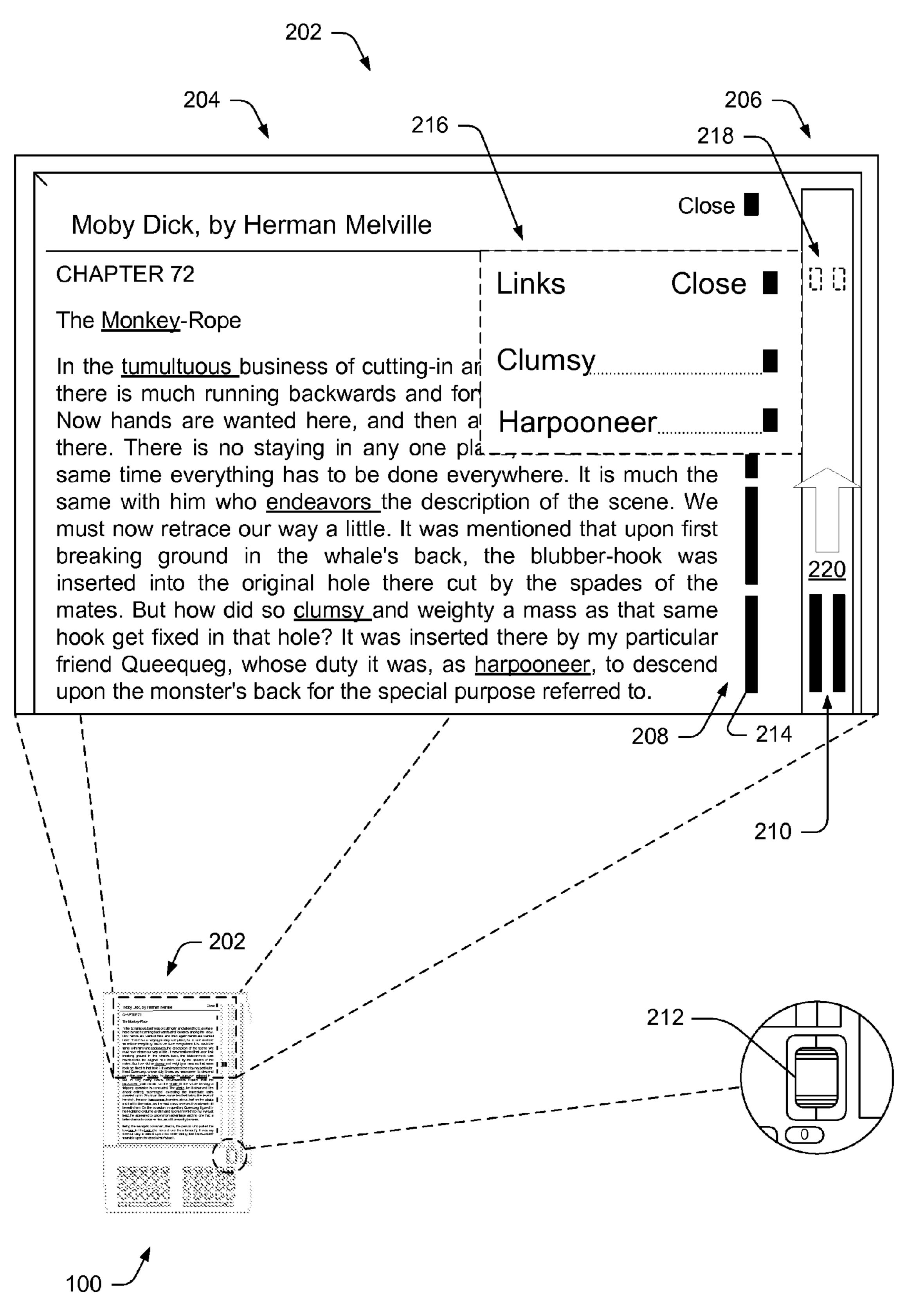


Fig. 2A

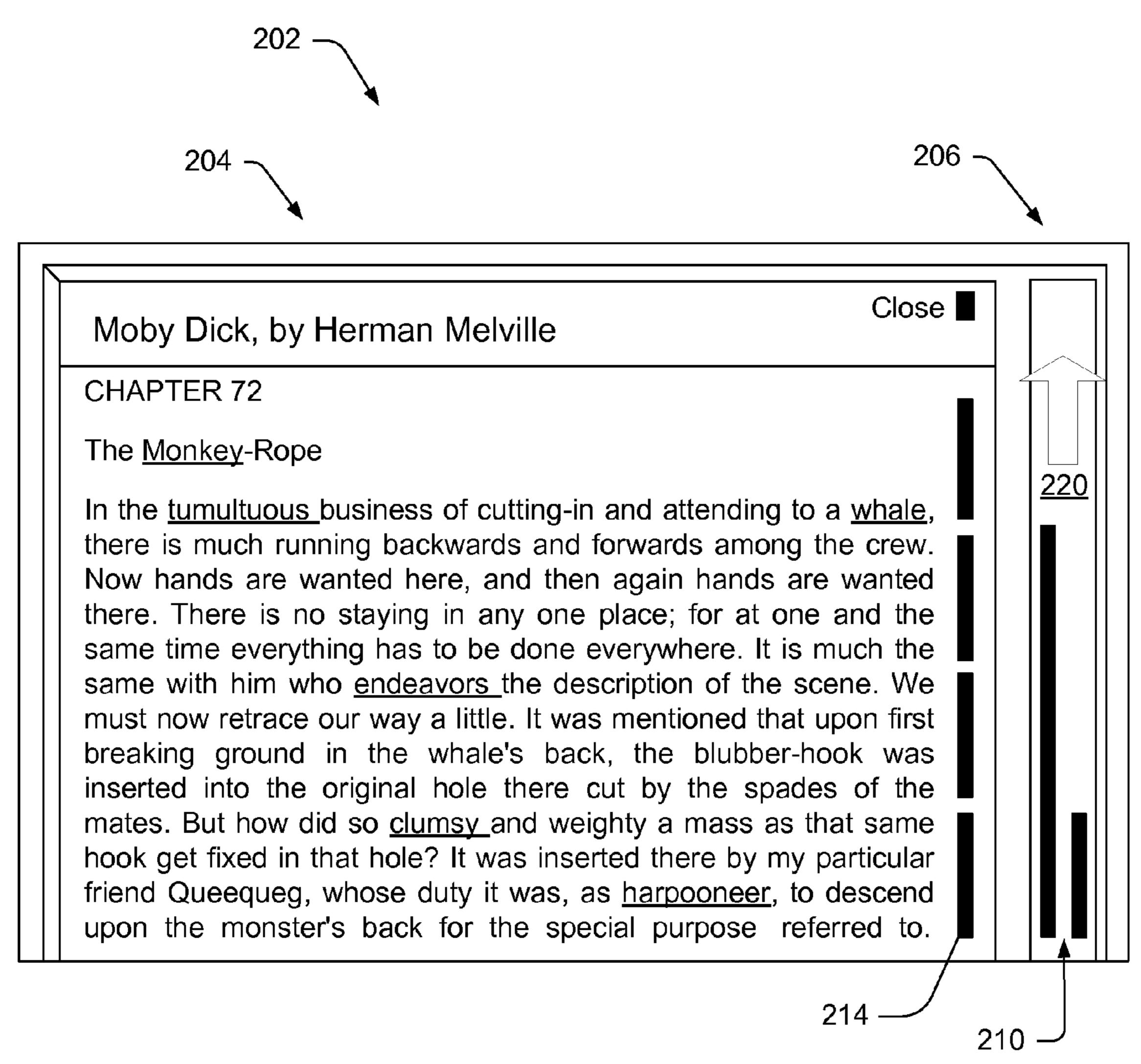


Fig. 2B

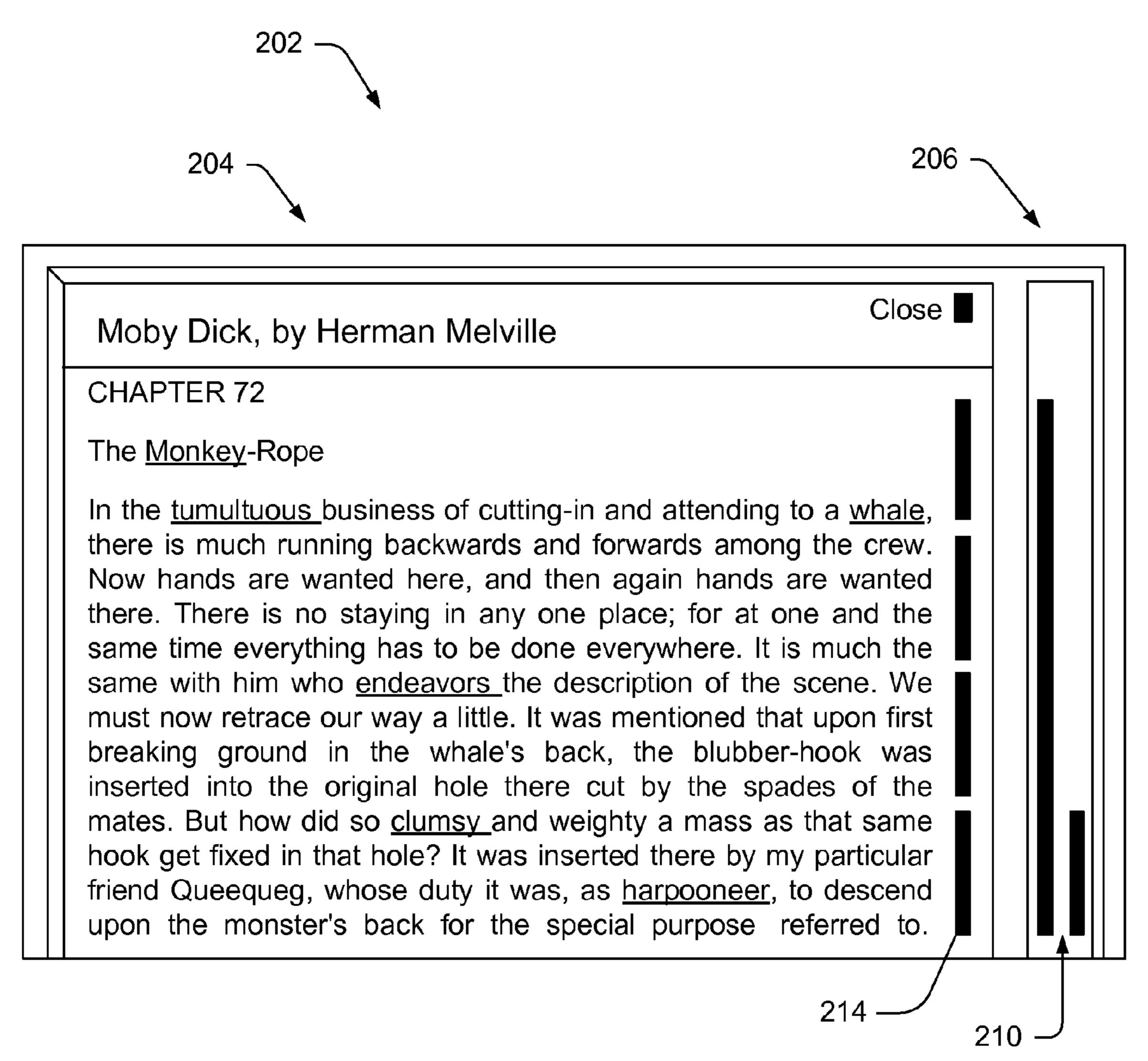


Fig. 2C

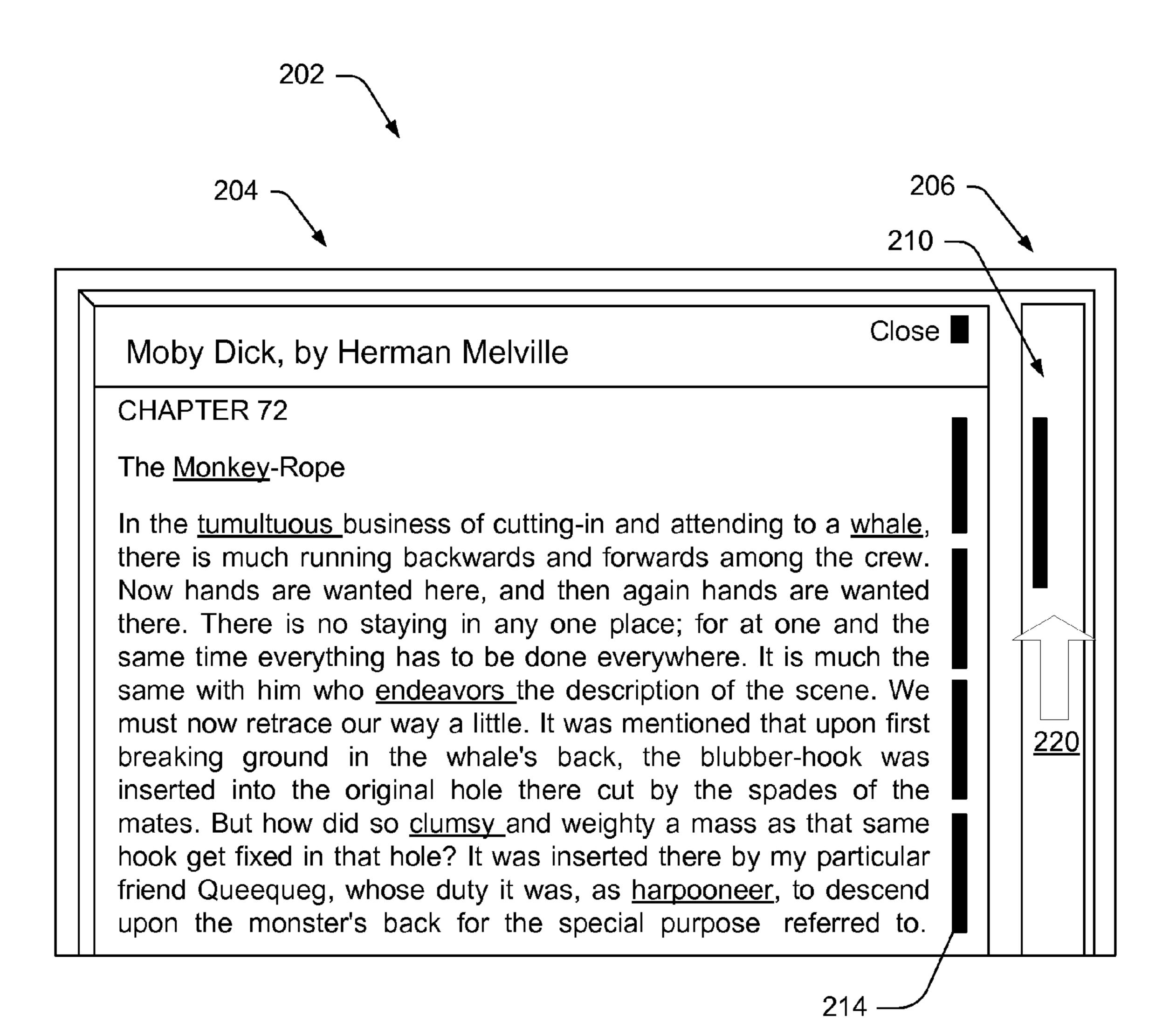


Fig. 2D

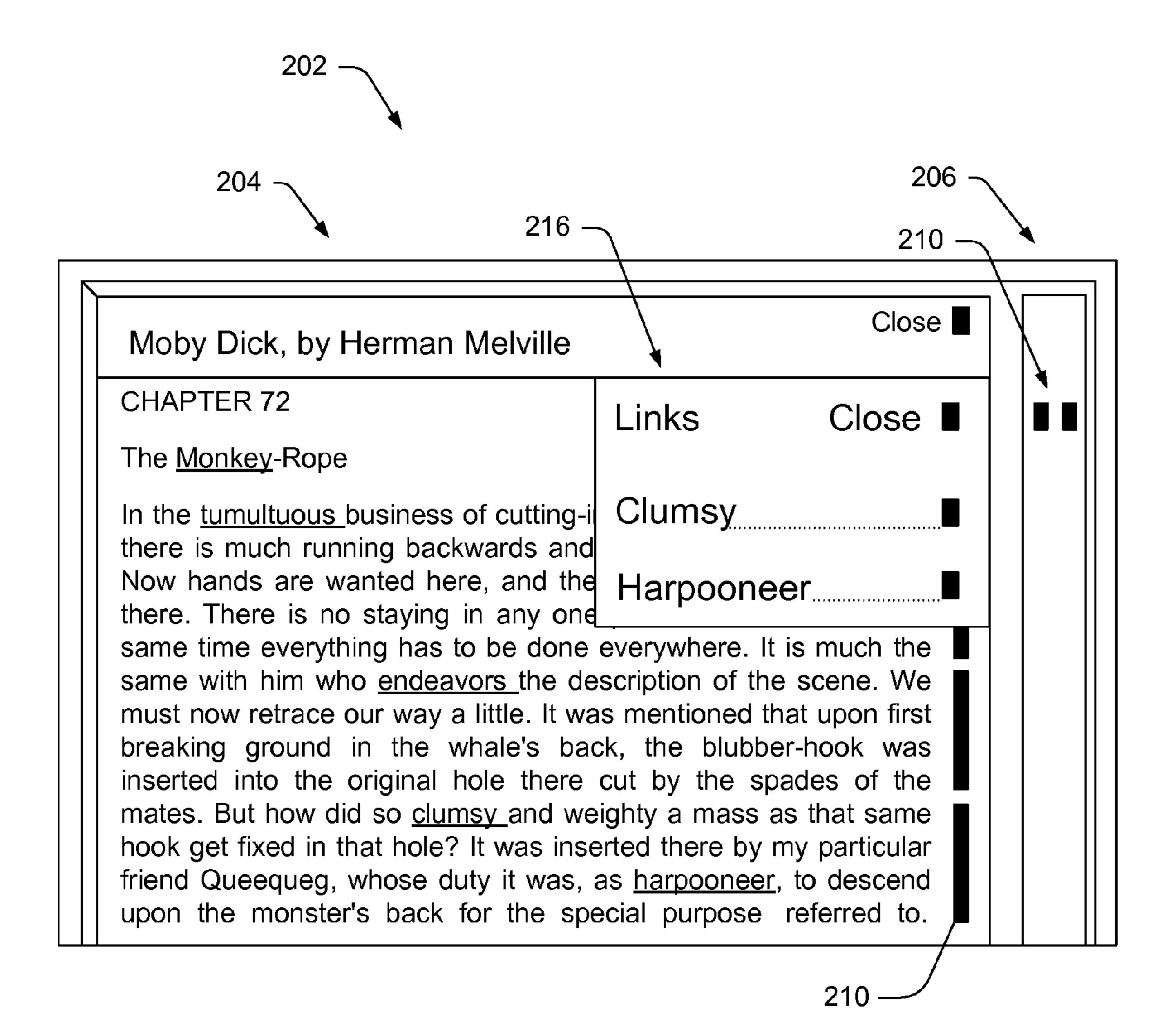


Fig. 2E

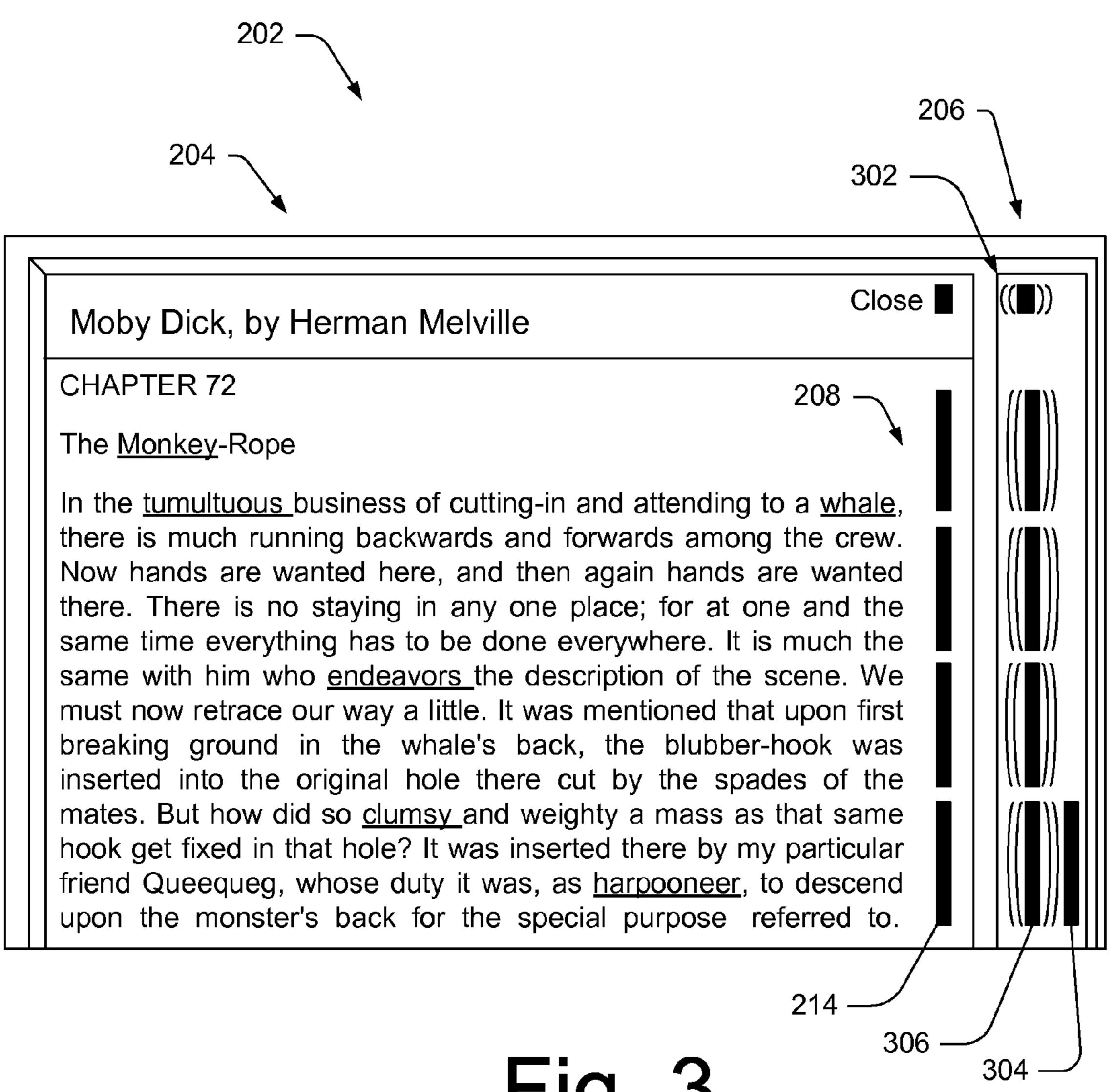


Fig. 3

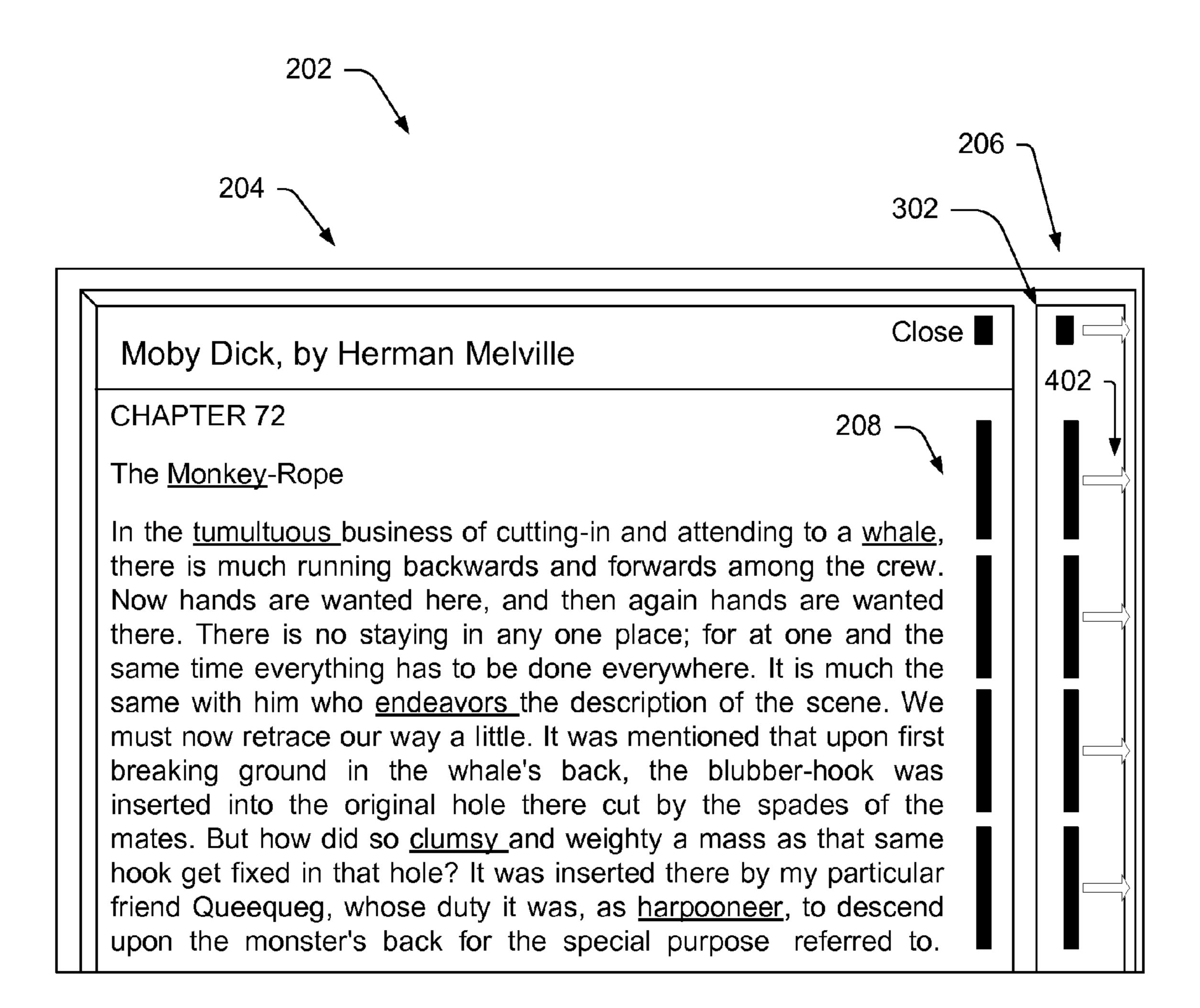


Fig. 4A

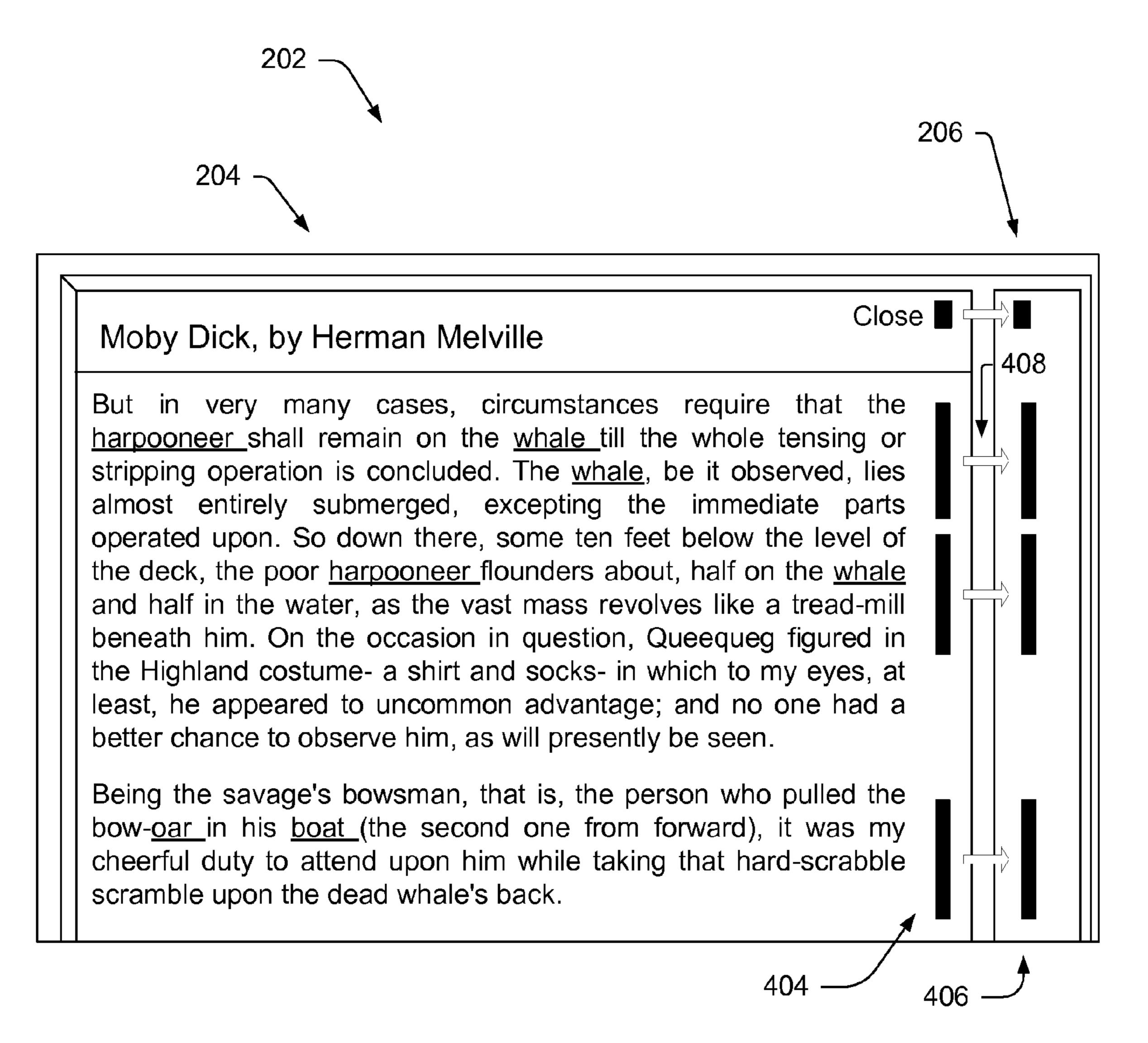


Fig. 4B

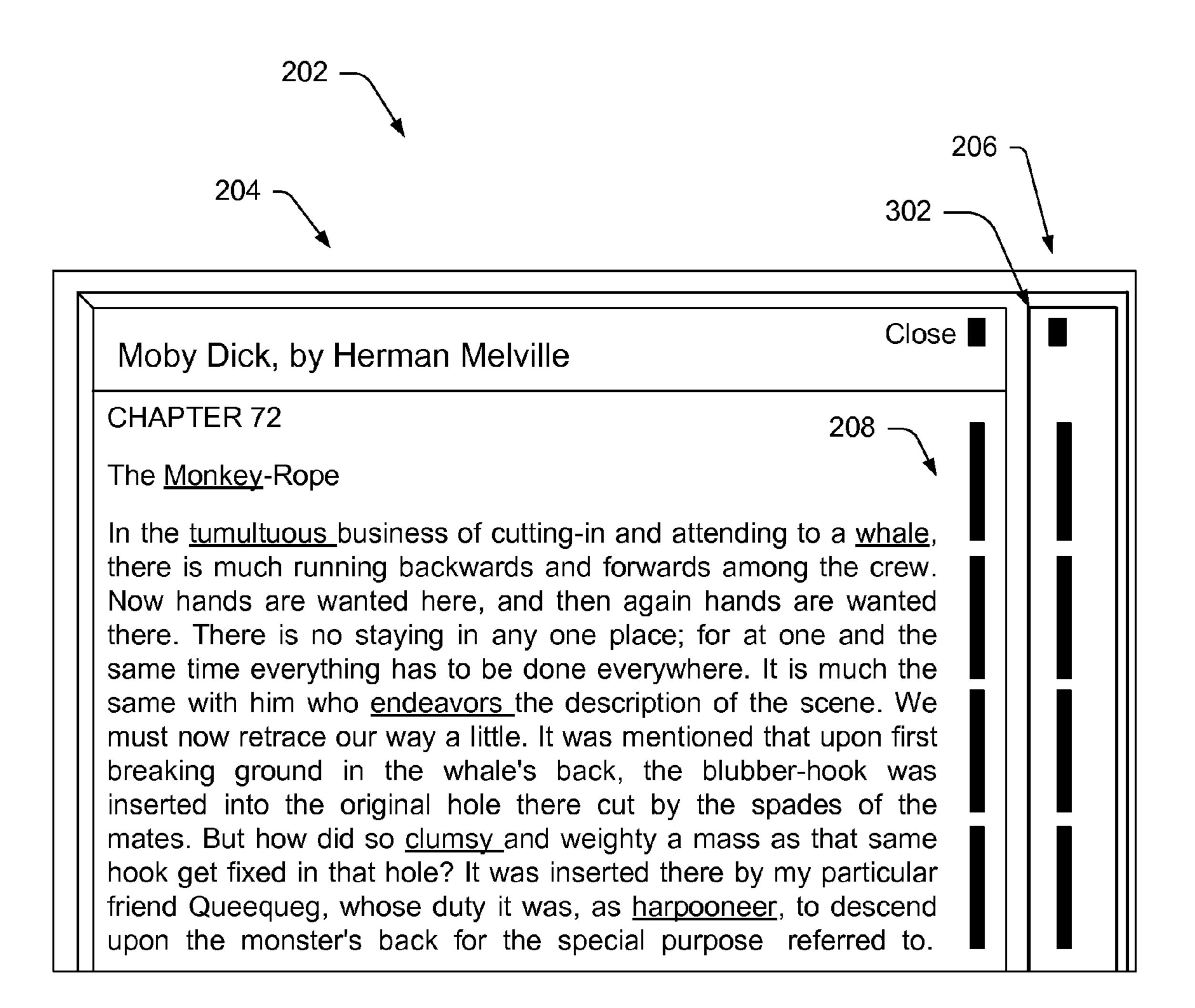


Fig. 5A

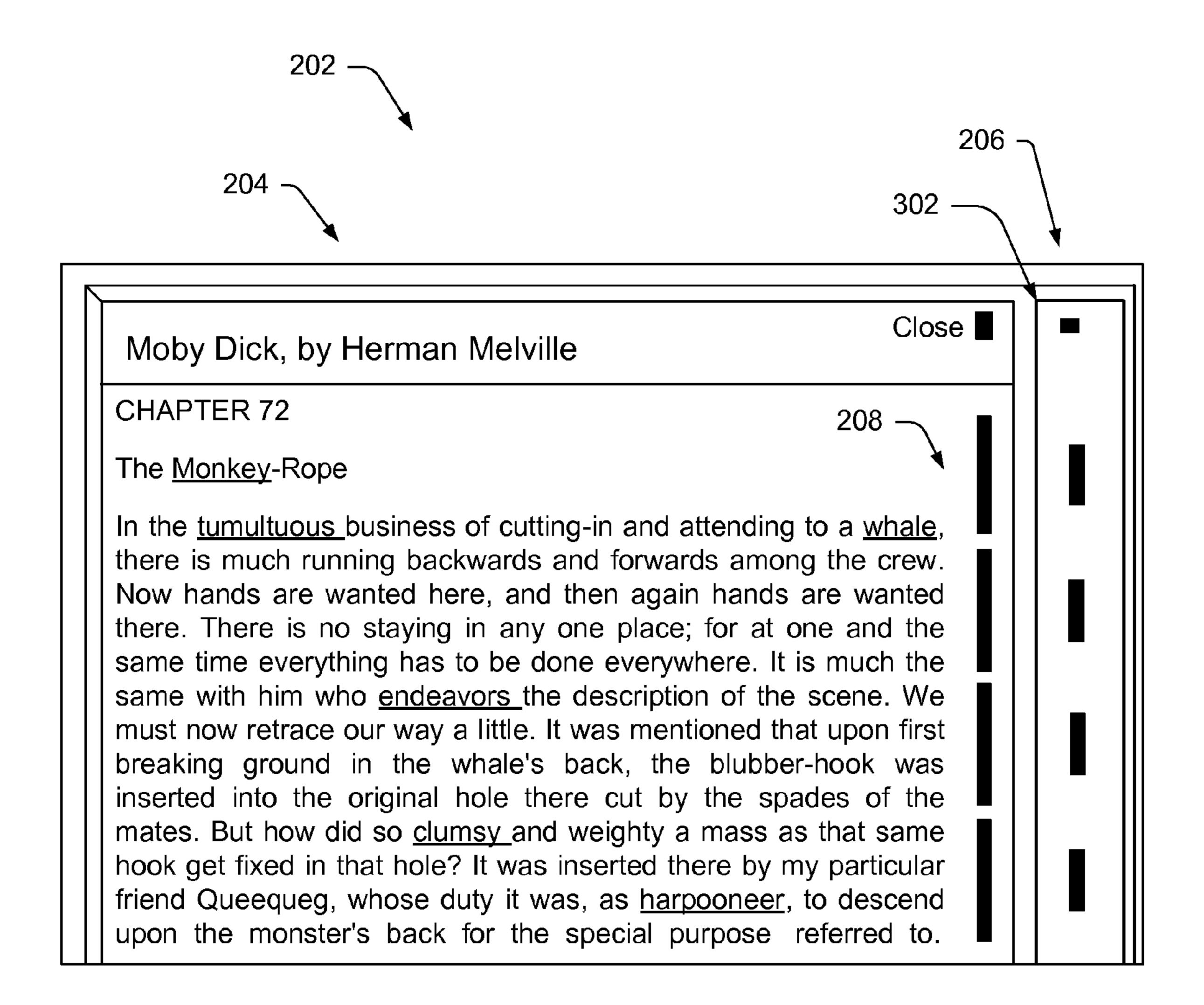


Fig. 5B

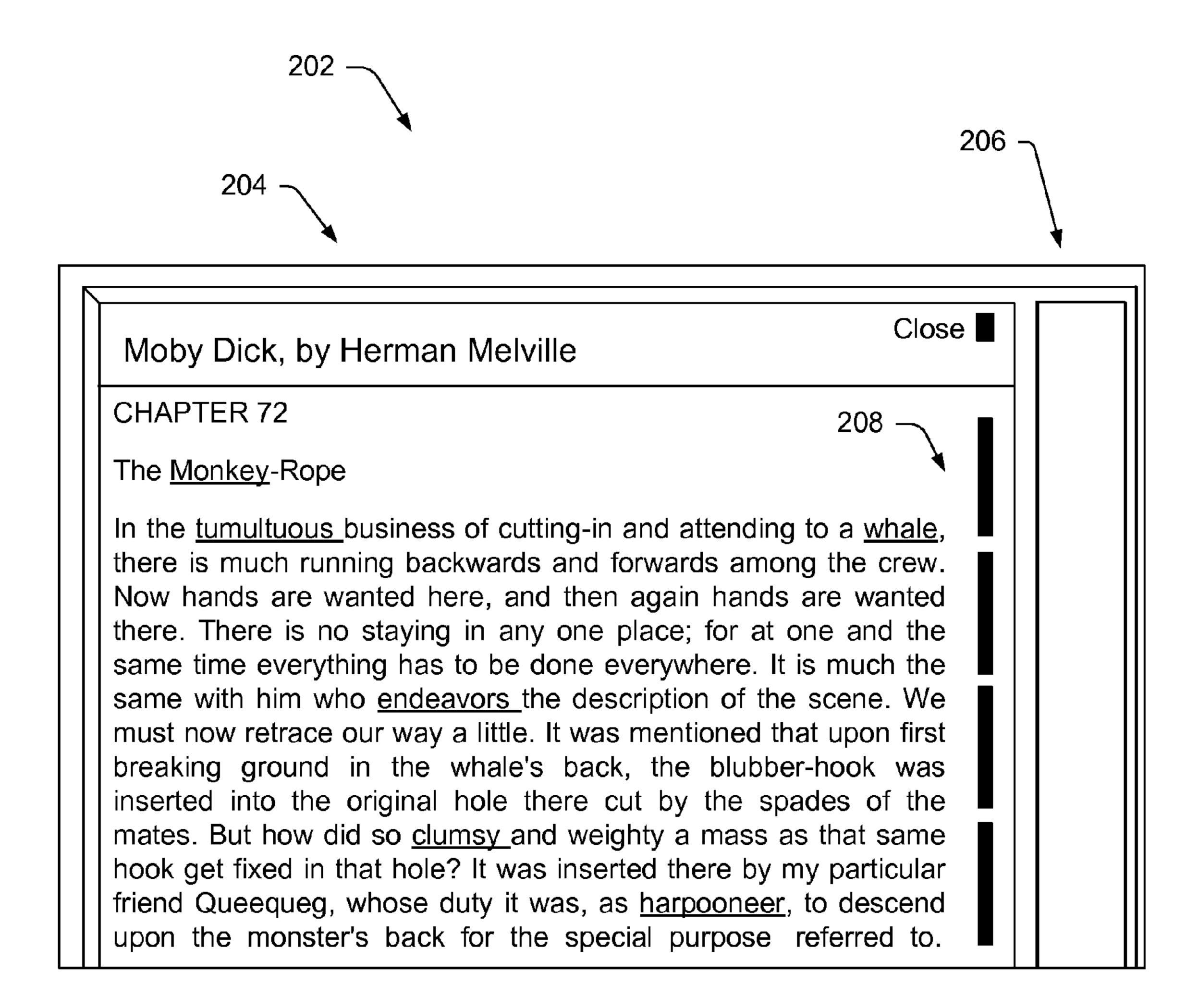


Fig. 5C

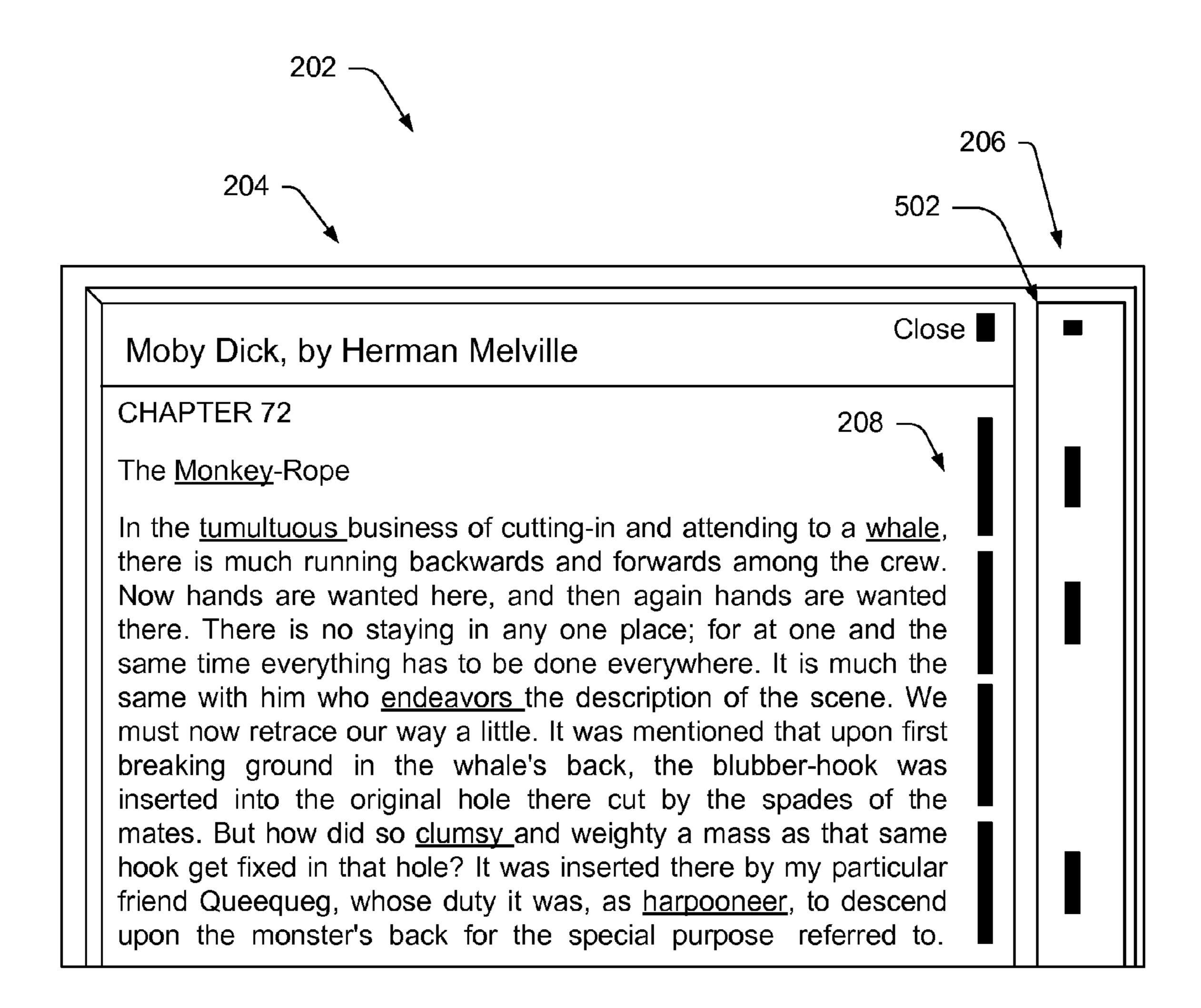


Fig. 5D

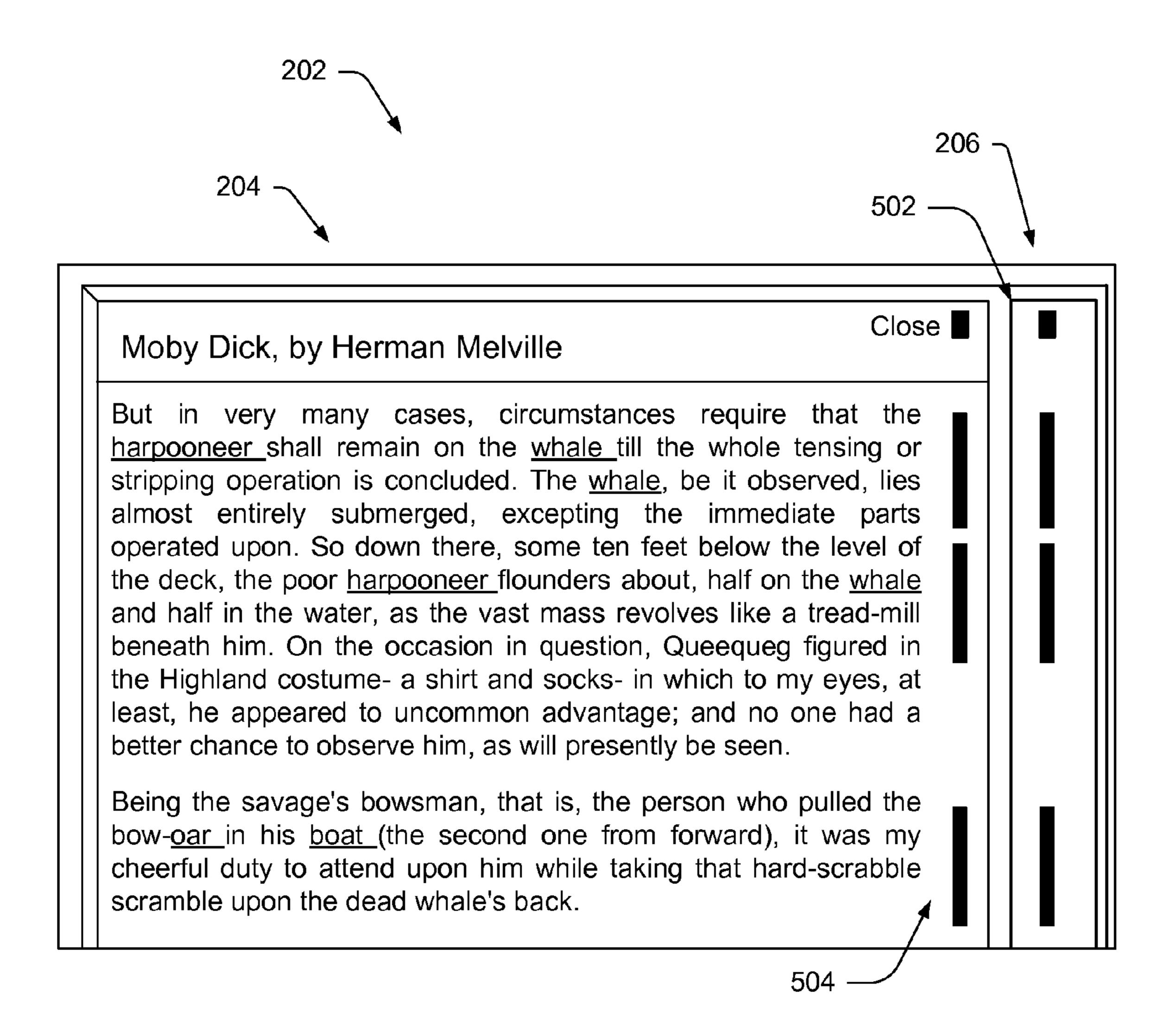


Fig. 5E

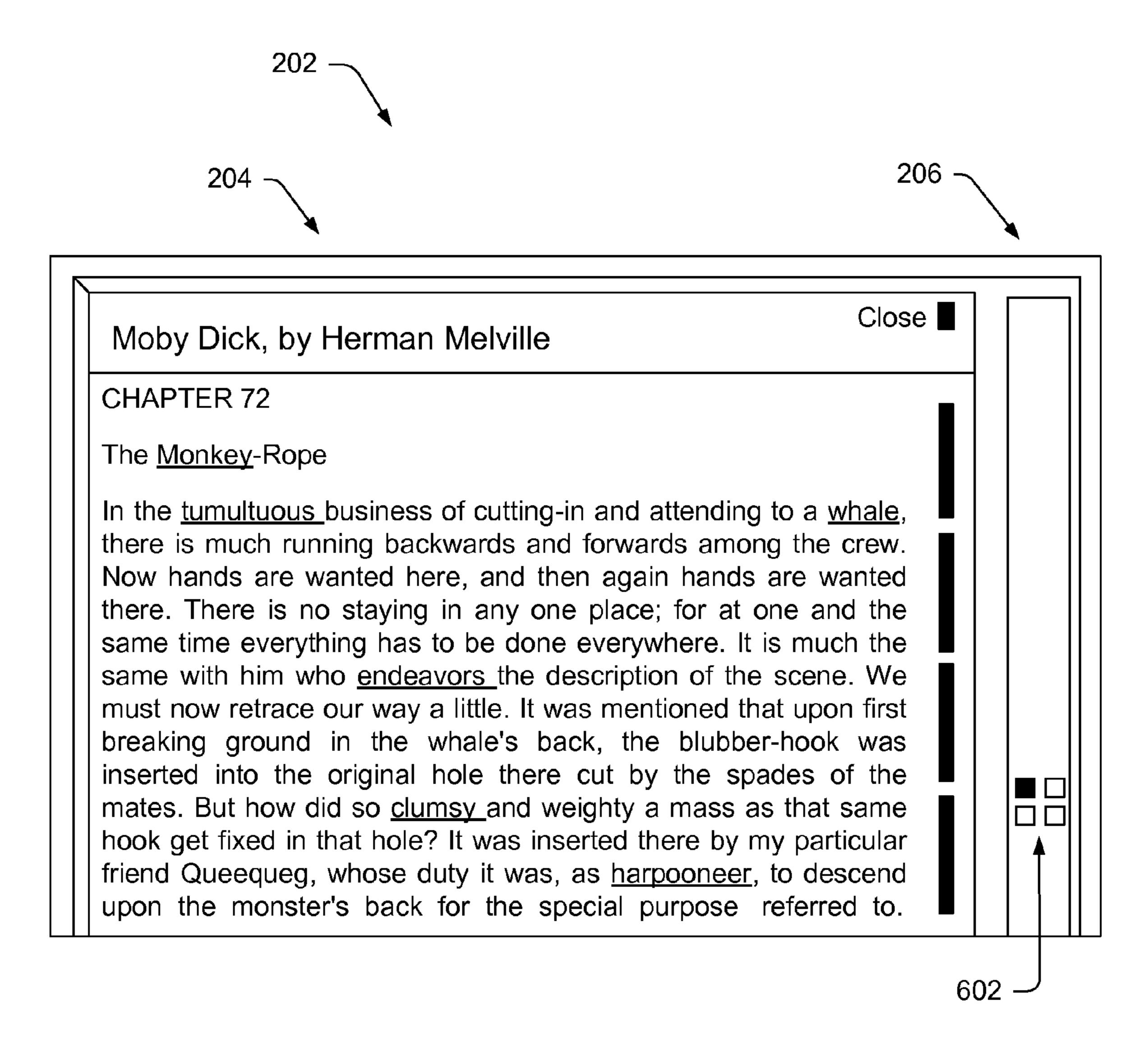


Fig. 6A

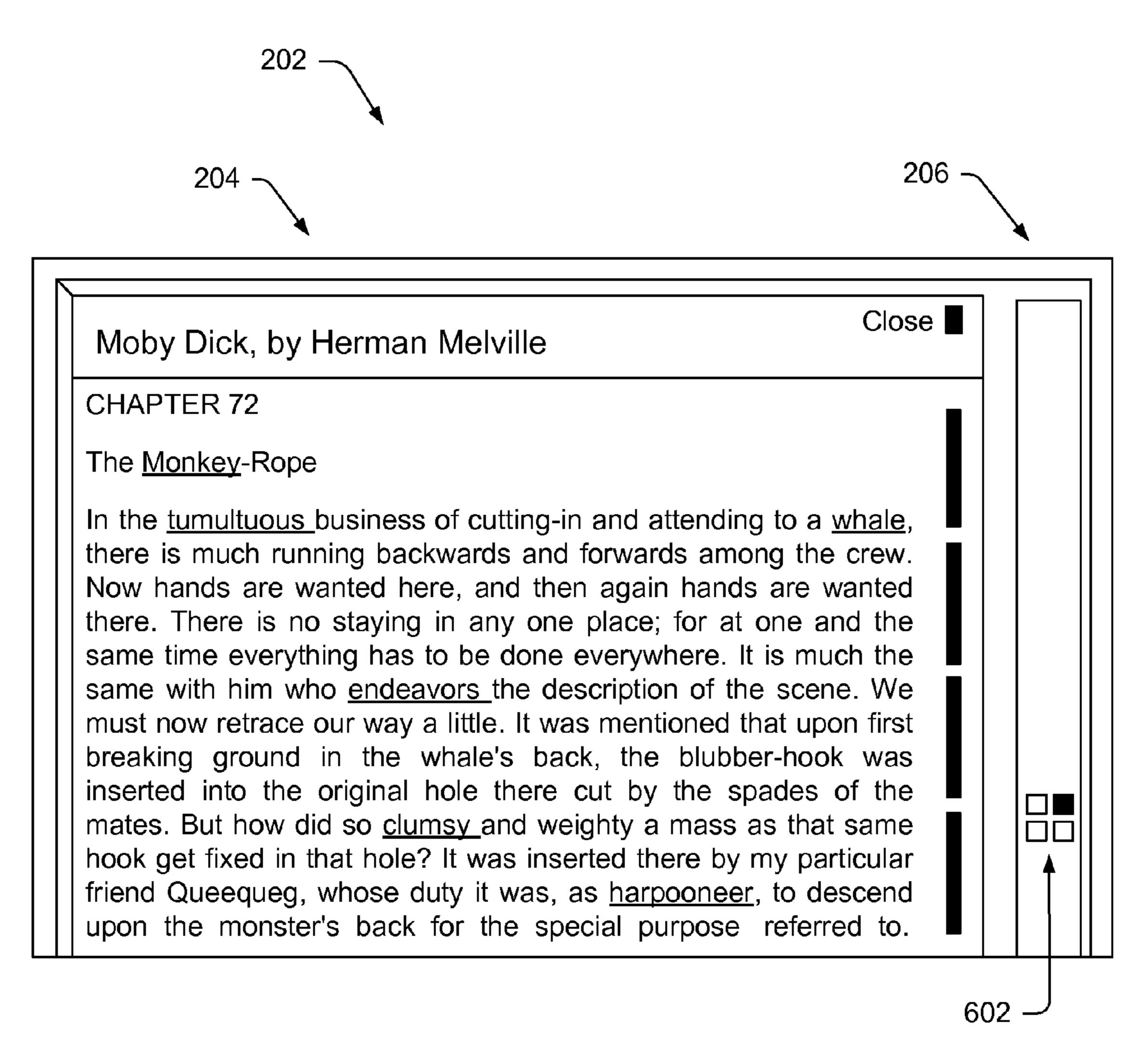


Fig. 6B

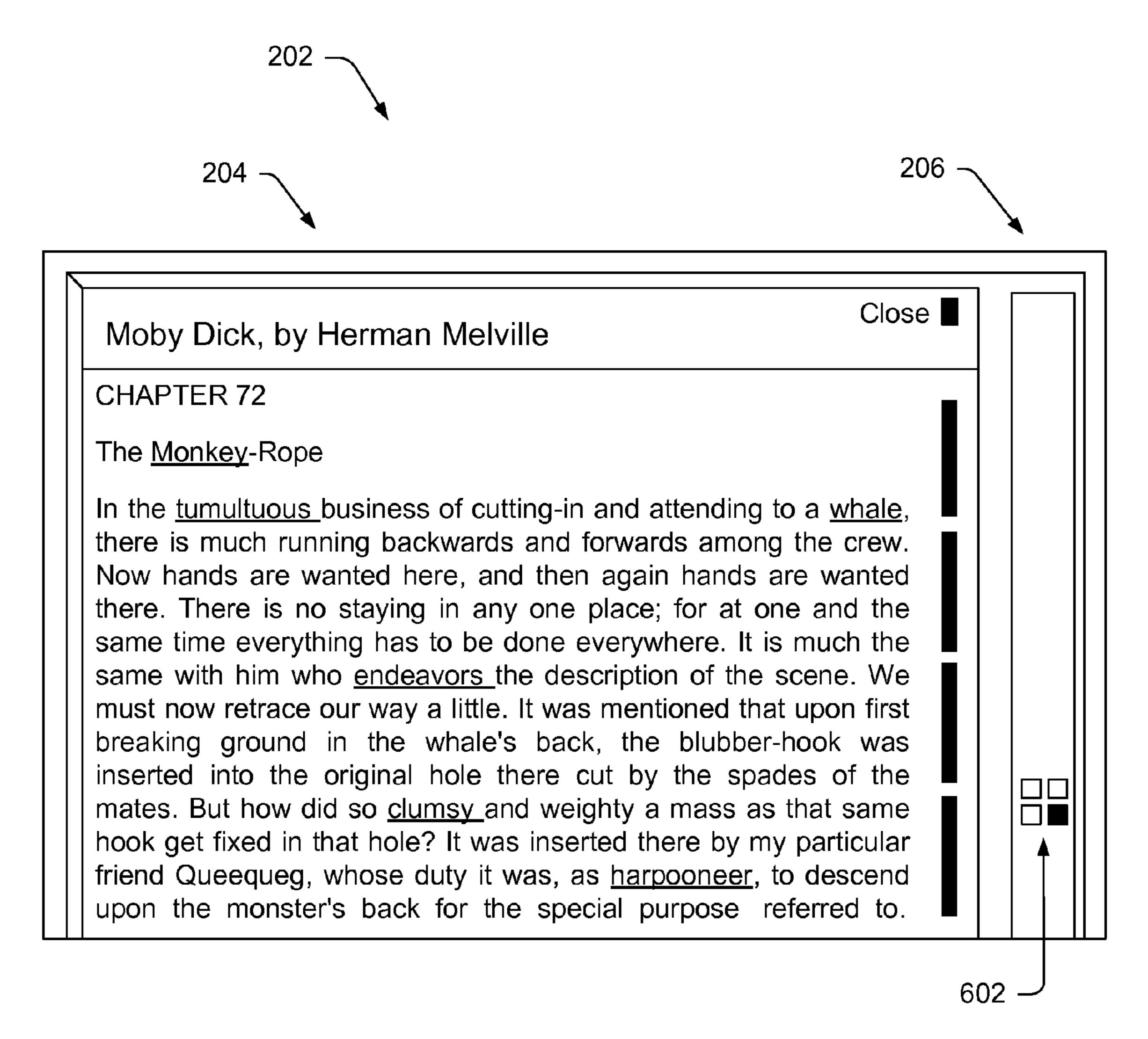


Fig. 6C

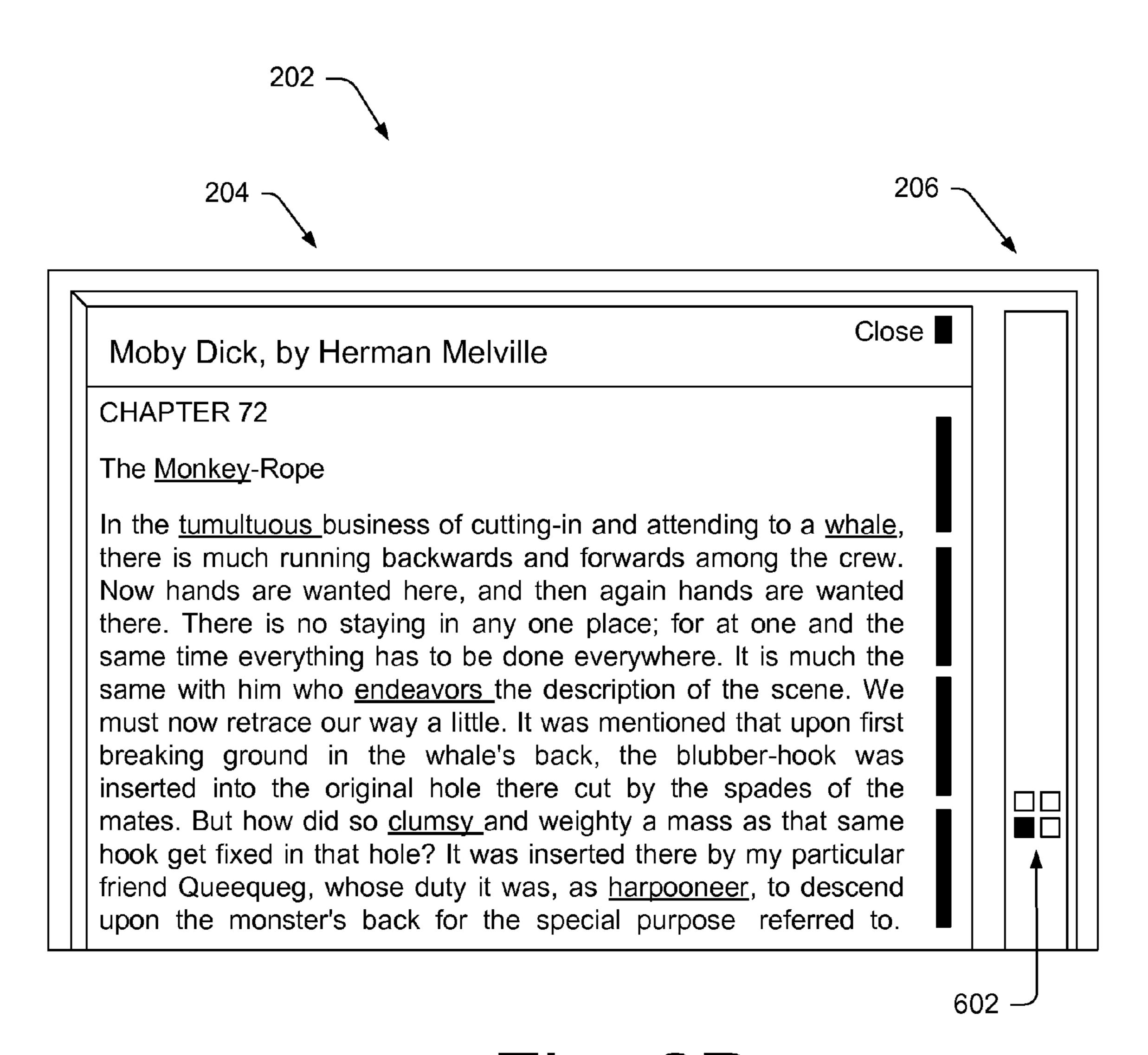


Fig. 6D

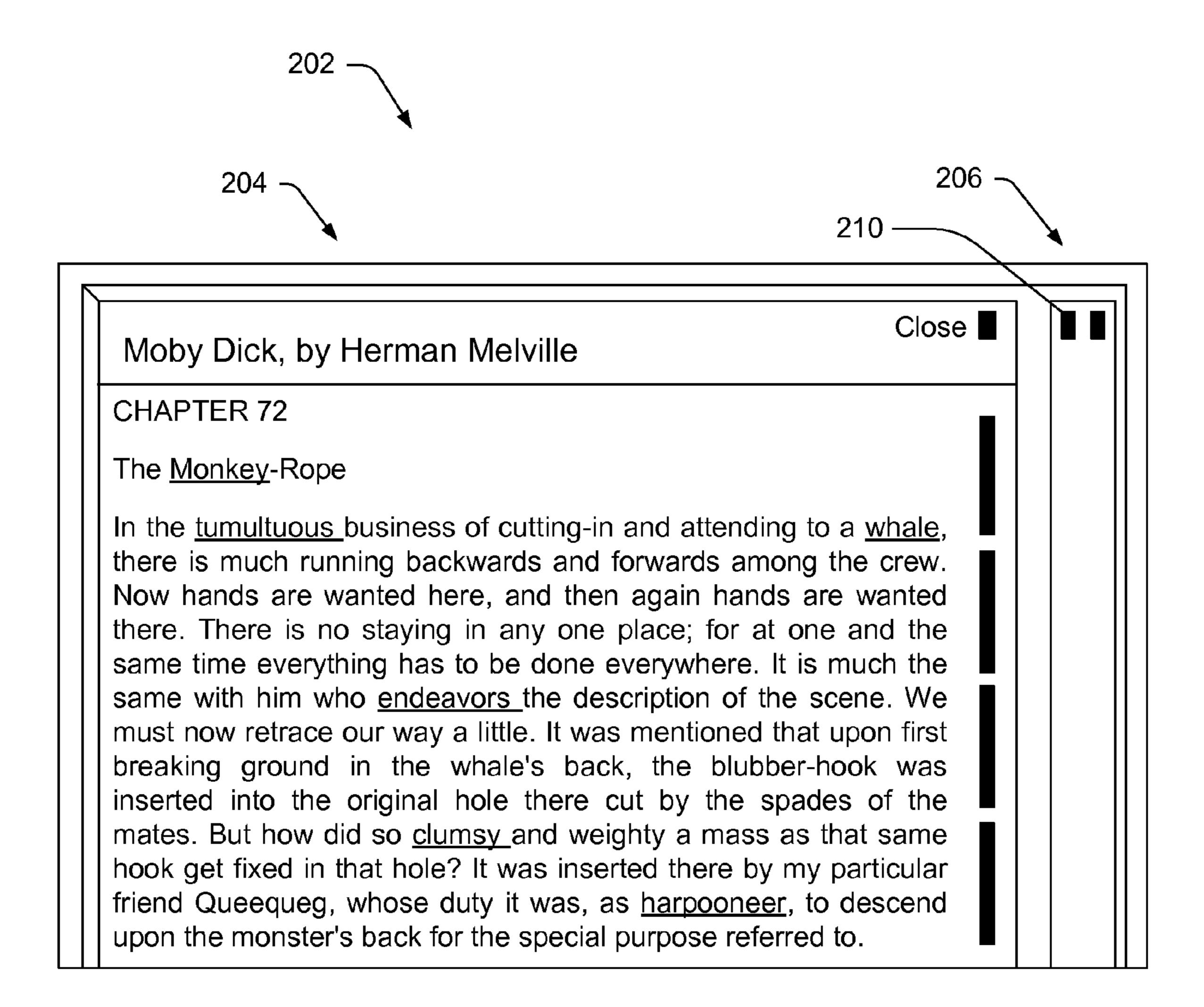


Fig. 7A

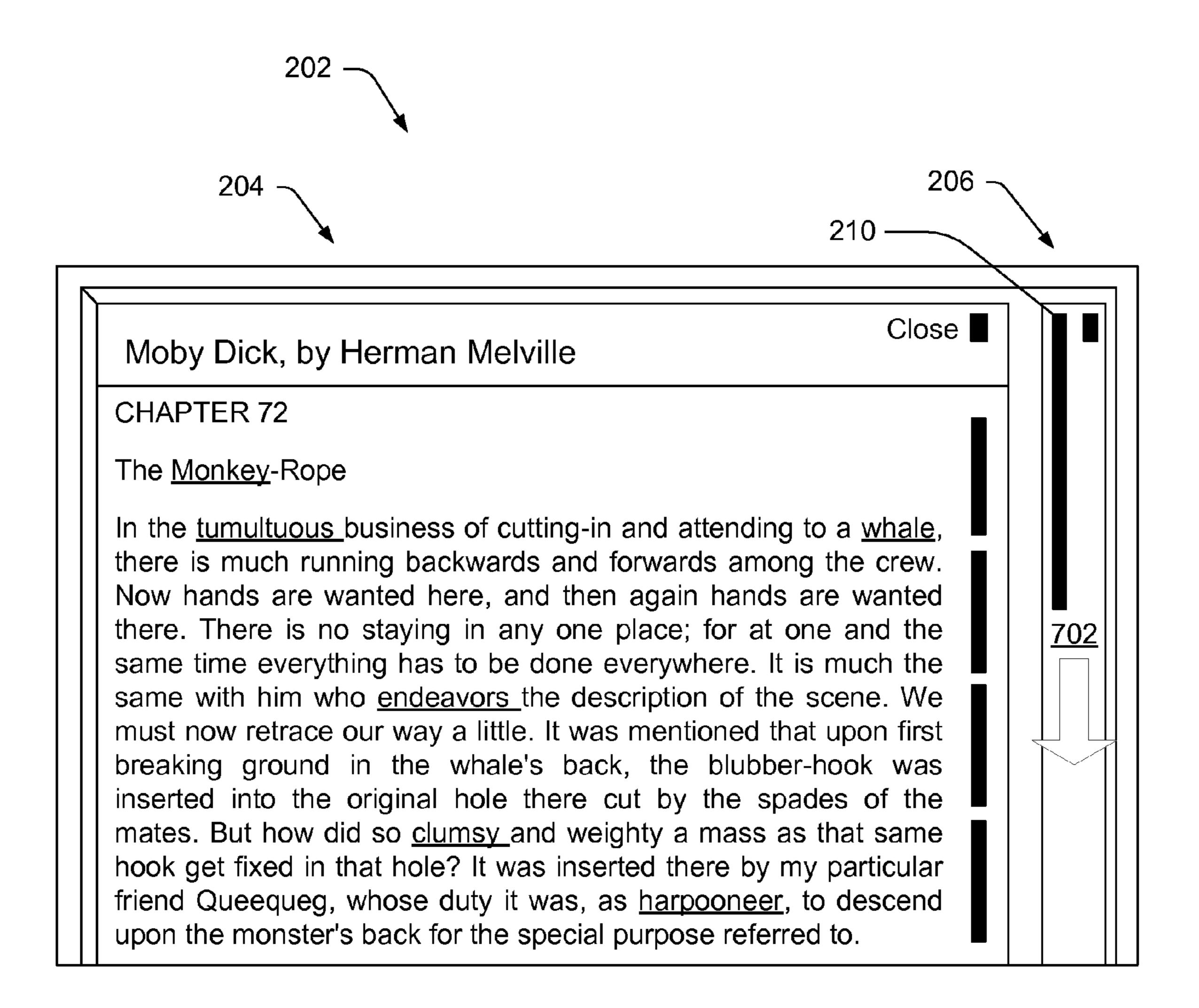


Fig. 7B

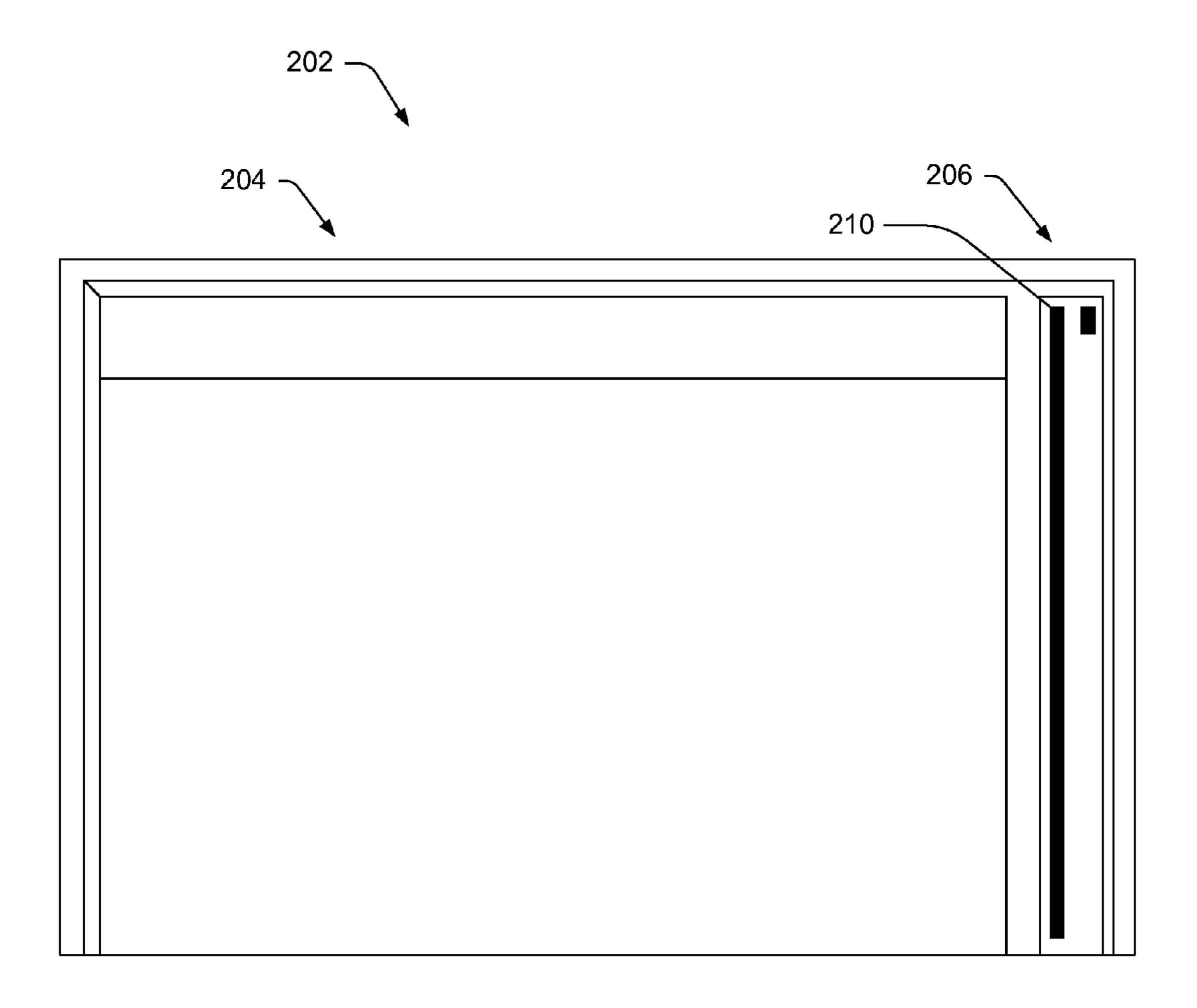


Fig. 7C

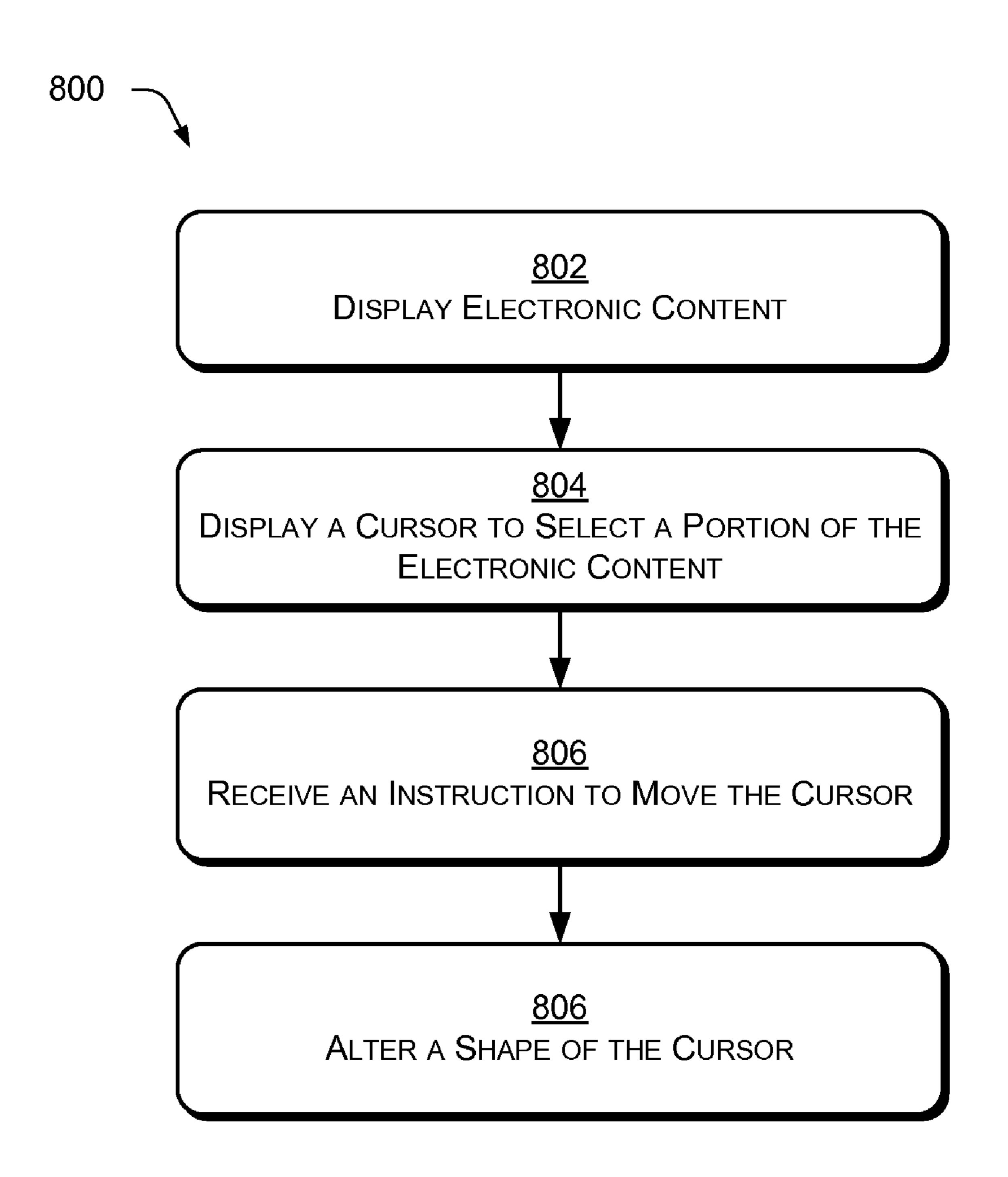


Fig. 8

ANIMATIONS

RELATED APPLICATION(S)

This application claims the benefit of U.S. Provisional 5 Application No. 60/939,357 filed on May 21, 2007, which is incorporated by reference herein in its entirety.

BACKGROUND

Users have traditionally consumed media items (such as books, magazines, newspapers, etc.) in hard-copy form. For instance, a user may obtain a physical book from a bookstore or a library. The user can read the book by manually flipping through its pages in conventional fashion.

A user may now also receive and consume some media items in electronic form. In one case, a user may use a personal computer to connect to a network-accessible source of media items via a conventional telephone or cable modem. The user may then download a document from this source. 20 The user may consume the document by printing it out and reading it in conventional fashion. Alternatively, the user may read the document in electronic form, that is, by reading the book as presented on a computer monitor. When the user reads the book in electronic form, the user typically must wait 25 for the computer monitor to render the book's pages as the user reads the book.

A provider of electronic media items faces various challenges, as many users continue to prefer consuming media items in traditional form. The provider confronts the task of 30 capturing the interest of such users, while providing a solution that is viable from a technical standpoint and a businessrelated standpoint. For instance, the provider faces the challenge of rendering the book's pages in an efficient manner that does cause the user to lose interest in the media item.

BRIEF DESCRIPTION OF THE DRAWINGS

Animations enhance viewing and consumption of electronic items that are presented to a user on a screen of a 40 computing device. These animations may occur in response to receiving an instruction to move a position of a cursor displayed on the screen of the computing device. A user may trigger this instruction, for instance, by selecting a portion of the electronic content with use of the cursor. In response to the 45 selection, the cursor or some other entity may undergo some form of animation. This animation may notify the user that the selection is being processed, and may also indicate a future position of the cursor at a time after the selection is processed.

The detailed description is described with reference to the 50 accompanying figures. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different figures indicates similar or identical items.

reader that may implement animations described herein.

FIGS. 2A-2E illustrate an electronic-book reader, as illustrated in FIG. 1, the reader having a first screen area for displaying content and a second screen area for displaying a cursor to select portions of the content. Here, the cursor 60 selects a portion of the content, which results in a form of animation. In addition, the displayed content is altered in response to the selection.

FIG. 3 illustrates another example of a form of animation. FIGS. 4A-4B illustrate a form of animation, wherein a first 65 set of selectable markers exit the second screen area while a second set of selectable markers appear.

FIGS. **5**A-**5**E illustrate a form of animation, wherein a first set of selectable markers shrinks and disappears from the second screen area, after which a second set of selectable markers appear.

FIGS. 6A-6D illustrate a form of animation, wherein the animation comprises an animated wait symbol.

FIGS. 7A-7C illustrate a form of animation, wherein the animation occurs in response to a cursor selection to close out the previously-displayed electronic content.

FIG. 8 is a flow diagram of a process for performing animations described herein.

DETAILED DESCRIPTION

This disclosure is directed to animations, which enhance a user's experience when viewing and consuming electronic items. In some instances, these animations may occur in response to a request to perform an operation upon presented electronic content. In other instances, animations occur in response to receiving an instruction to move a position of a displayed cursor. This instruction may be triggered by a user or by a device upon which the electronic item is displayed. For instance, a user may select a portion of displayed content with a cursor. This selection may trigger an instruction to move a position of the cursor. The movement of the cursor or action by some other entity may then result in some form of animation. The displayed content may also be altered to reflect the user's selection.

For instance, the user may select a link (e.g., a Uniform Resource Location (URL)) within the displayed content. While the device loads content associated with the link, the cursor may perform the animation. This animation may notify the user that the selection is being processed. In some instances, this animation may also indicate to the user a future location of the cursor once the displayed content is altered (e.g., after the content associated with the URL is loaded).

For purposes of discussion, these animations are described in the context of an electronic-book reader. While various implementations of this environment are provided herein below, it should be appreciated that the described techniques may be implemented in other environments.

FIG. 1 illustrates one example of an electronic-book reader 100 employing techniques described herein. Electronic-book reader 100 is merely provided as an example; multiple other computing devices may similarly employ the described techniques. The devices may include, without limitation, a personal computer, a laptop computer, a Portable Digital Assistant (PDA), a mobile phone, a set-top box, a game console, and so forth.

As illustrated, electronic-book reader 100, or reader 100, includes one or more processors 102, as well as a display 104 and memory 106. Memory 106 may include volatile and nonvolatile memory, removable and non-removable media FIG. 1 illustrates one example of an electronic-booker 55 implemented in any method or technology for storage of information, such as computer-readable instructions, data structures, program modules, or other data. Such memory includes, but is not limited to, computer-readable media such as RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital versatile disks (DVD) or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, RAID storage systems, or any other medium which can be used to store the desired information and which can be accessed by a computing device. Computer readable program code, meanwhile, may be any type of code stored on any type of computerreadable medium.

Memory 106 is shown to include an animations module 108, as well as one or more electronic items 110. Electronic items 110 may comprise any sort of electronic content capable of being rendered on display 104. These items may include, for example, an electronic book, Web pages, electronic news articles, applications, device tools, and the like.

Animations module 108, meanwhile, may create and present one or more forms of animation upon display 104. These animations may occur in response to receiving a request to perform an operation upon electronic content pre- 10 sented on display 104. These animations may also occur alternatively or additionally in response to receiving an instruction to move a position of a displayed cursor. For instance, an animation may occur between a time when a user enters a command on reader 100 and a time when the command is processed and presented to the user. As such, these animations may serve to notify the user that a command has been received and is being processed. These animations may also occur in response to other user- or device-initiated operations, such as a pop-up box appearing on display 104. 20 Descriptions of actions an animation module 108 may implement are detailed herein below.

FIG. 2A displays an electronic-book reader 100 that includes a screen 202 to display electronic media items, such as electronic books and web content, as well as any other 25 items that can be displayed electronically on screen 202. In the instant illustration, screen 202 is shown to display an electronic book, namely Moby Dick by Herman Melville.

Screen 202 includes a first screen area 204 and a second screen area 206. First screen area 204 displays content, such 30 as an electronic book, associated menus, and the like. First screen area 204 also displays one or more selectable markers 208, each of which corresponds to a portion of the displayed content. Although first screen area 204 is shown to include selectable markers 208, other implementations may not 35 include these markers. Still other implementations may include these markers when displaying some but not other types of content on first screen area 204. For instance if first screen area 204 displays a web browser and corresponding web content, then first screen area 204 may not include markers 208. If, however, first screen area 204 displays a home page or the like of device 100, then markers 208 may be included.

Second screen area 206, meanwhile, enables selection of selectable markers 208 and, hence, selection of one or more 45 portions of the displayed content. In implementations where first screen area 204 does not include selectable markers 208, screen 206 enables selection of the portions of displayed content directly. To select markers 208 and/or a portion of the displayed content, second screen area 206 includes a cursor 50 210, here illustrated as two parallel bars. While FIG. 2A illustrates a cursor to select the selectable markers, other environments and/or contexts may utilize other selection means. For instance, a keypad of electronic-book reader 100 may be used in instances where each of selectable markers 55 208 corresponds to a letter, a numeral, or the like.

To select a selectable marker, a user first aligns cursor 210 with one of markers 208 with use of a cursor actuator 212. While cursor actuator 212 is illustrated as a thumbwheel, other actuators such as a touch pad, a rollerball, or the like 60 may also be utilized. Once aligned, the user may select the marker by actuating cursor actuator 212. After selection of the marker, the displayed content within first screen area 204 may be altered in accordance with the selection.

In the illustrated example, the text associated with the 65 displayed electronic book is shown to include multiple links. These links may be web links, internal links, or the like. For

4

purposes of the instant discussion, selection of one of selectable markers 208 will result in the displayed content being altered to display a menu of the links within a corresponding section of text. It is specifically noted, however, that these selections merely highlight the described animations, and that such animations may likewise occur in response to multiple other selections or operations. For instance, the animations described below may also occur in response to a pop-up window appearing in first screen area 204.

In the instant example, FIG. 2A illustrates that cursor 210 currently aligns with a selectable marker 214. Selectable marker 214 corresponds to a portion of the displayed content including links for "clumsy" and "harpooneer". Therefore, when the user selects marker 214 by actuating cursor actuator 212, a menu 216 containing these links may appear within first screen area 204. FIG. 2A illustrates this to-be-rendered menu in dashed lines. The selecting of marker 214 may also be effective to locate cursor 210 in a different position 218. Again, FIG. 2A illustrates this future position in dashed lines.

In some instances, first screen area 204 and second screen area 206 may have different refresh rates—or different rates at which displayed content may be altered. In some specific instances, second screen area 206 has a refresh rate that is faster than a refresh rate of screen area 204. As such, displayed content (e.g., cursor 210) within second screen area 206 may be altered sooner than first screen area 204 after selection of marker 214.

Due to the faster refresh rate, screen area 206 may be utilized to indicate to the user that a selection is being processed. In some instances, cursor 210 may undergo some form of animation after selection of marker 214 and before the content displayed within first screen area 204 is altered. Again, this animation may indicate to the user that selection of marker 214 is being processed. While cursor 210 is shown to undergo the animations, other entities may alternatively or additionally undergo this animation. These other entities may reside within second screen area 206.

FIG. 2A thus represents cursor 210 and cursor actuator 212 selecting marker 214. In response, cursor 210 begins growing or expanding, as arrow 220 represents. In some instances, cursor 210 may expand towards future position 218 of the cursor. Future position 218 represents a position of the cursor after the selection has been processed and after the displayed content has been altered. Therefore, FIG. 2A illustrates cursor 210 growing in an upward direction. Note while FIG. 2A represents selection of marker 214, other implementations may not include marker 214. Here, a user may merely align cursor 210 with the desired displayed content and actuate cursor actuator 212.

FIG. 2B continues the illustration of FIG. 2A. Again, FIG. 2B shows cursor 210 expanding in the upward direction. Although only a single bar of cursor 210 is shown to expand, the entire cursor may expand in other implementations. FIG. 2C, meanwhile, illustrates that a top of cursor 210 has reached the future position of the cursor. Growth of the cursor thus ceases, as the absence of arrow 220 represents. FIG. 2D represents that, at this point, cursor 210 may begin to shrink or reduce in size. That is, a bottom of cursor 210 may begin moving toward the future position of the cursor. In the illustrated instance, arrow 220 represents that the bottom of cursor 210 may begin moving upwards towards the future position.

Finally, FIG. 2E represents that the bottom of cursor 210 reaches the new position, at which point the cursor's animation may cease, as the absence of arrow 220 represents. At this point, the displayed content within first screen area 204 has been altered to display menu 216. In addition, note that the second bar of cursor 112 may reappear at this time.

Note also that a time taken to conduct the animation of FIGS. 2A-2E may be independent of a distance between a cursor's initial position and the cursor's future position in some instances. That is, the animation may take the same amount of time regardless of the distance between the initial 5 and future cursor positions. Additionally, some implementations conduct these animations in a non-linear manner. For instance, cursor 210 may begin growing a certain speed before slowing down as cursor 210 approaches future position 218. This may also be true for reduction or shrinking of 10 cursor 210

In sum, animation of cursor 212 may occur in response to receiving an instruction to move the cursor. This animation may also occur in response to a user- or device-initiated request to perform an operation upon the presented electronic content. This animation may fill or approximately fill a gap between a time an operation occurs and a time at which results of the operation are rendered by first screen area 204. For instance, these animations may fill the gap between a time at which marker 214 is selected and a time at which menu 216 is presented to the user. Additionally, the animation may indicate to the user future position 218, the future position corresponding to a cursor position at a time when the selection has been processed and the displayed content altered. While FIGS. 2A-2E illustrate a single illustrative form of animation, 25 other animations may similarly be employed.

FIG. 3, for instance, illustrates another illustrative form of animation. Here, second screen area 206 reproduces selectable markers 208, as illustrated by markers 302. FIG. 3 also illustrates a cursor 304, which is a single bar in this instance. 30 Here, cursor 304 may align with and actuate one of selectable markers 208 and 302 with use of cursor actuator 212.

In the instant illustration, cursor 304 selects a selectable marker 306 that again corresponds to marker 214. In response to the selection, one or more of markers 302 may undergo 35 some form of animation, as may cursor 304. In some implementations, some or all of the non-selected markers may shrink or reduce in size. In fact, these non-selected markers may initially grow in size before reducing in size before possibly disappearing from second screen area 206 altogether. In other implementations, the selected marker within second screen area 206 may grow in size until the displayed content within first screen area 204 is altered in accordance with the selection of markers 306 and 214. In still other implementations, both selected and non-selected markers 45 may undergo some form of animation similar or different to the animations described above.

FIGS. 4A-4B illustrate an illustrative form of the animation discussed above in regards to FIG. 3. FIG. 4A illustrates a time immediately after a request to perform an operation 50 upon the displayed content. For instance, a user may have chosen to view a "next page" of the illustrated electronic book. In response to this request, selectable markers 302 are shown as exiting second screen area 206 in an animated fashion. Here, markers 302 are shown to move off of screen 55 area 206 to the right, as arrow 402 illustrates.

FIG. 4B continues the illustration, and depicts that the displayed content includes a new set of selectable markers 404. In response to this new set of markers 404, second screen area 206 reproduces these markers in the form of selectable 60 markers 406. Selectable markers 406 are shown to move onto second screen area 206 in an animated fashion. In the instant example, markers 406 are shown to slide onto the screen from the left, as arrow 408 illustrates.

FIGS. **5A-5**E illustrate yet another illustrative form of ani- 65 mation that may occur in response to a user- or device-initiated request to perform an operation upon the presented elec-

6

tronic content. Similar to the preceding example, these figures are described with reference to a user choosing to view a next page of the displayed electronic book. After the user makes such a selection at a time illustrated by FIG. 5A, FIG. 5B illustrates that selectable markers 302 begin to shrink in size. Note that a height and/or a width of these markers may shrink. FIG. 5C, meanwhile, shows that selectable markers 302 have disappeared entirely from second screen area 206.

At a time illustrated by FIG. 5D, a new set of selectable markers 502 begin to grow within second screen area 206. This new set of markers may correspond to a set of selectable markers that will be displayed upon first screen area 204 once the next page of the book has been rendered. Finally, FIG. 5E shows that selectable markers 502 have grown to a full size, at which point animation of the markers may stop. In addition, FIG. 5E illustrates that the electronic book has processed the user's selection to view the next page and, accordingly, a set of selectable markers 504 has appeared within first screen area 204.

FIGS. 6A-6D illustrate yet another illustrative form of animation that may occur in response to a request to perform an operation upon the presented electronic content, such as a cursor's selection of a selectable marker. Here, the cursor takes the form of an illustrative animated wait symbol 602. In the illustrative example, animated wait symbol 602 comprises a two-by-two matrix of boxes or dots. In some instances, three of these boxes may be empty, while another may be solid. The solid box may then iterate with time through each of the four positions (e.g., clockwise or counterclockwise), as FIGS. 4A-4D illustrate. This iteration may complete until the selection is processed and the displayed content within first screen area 204 is altered, such as depiction of menu 216 in FIG. 2E. Again, the animation of FIGS. 6A-6D may indicate to the user of electronic-book reader 100 that the user's selection is being processed.

Although FIG. **6**A depict one illustrative animated wait symbol, others may be similarly implemented. For instance, three of the four boxes may be solid, while an empty box iterates through each of the four positions (e.g., clockwise or counterclockwise). Conversely, two boxes could be solid and two empty. For instance, a top-left box and a bottom-right box may be solid, before becoming empty while a top-right box and a bottom-left box become solid. This alternation of solid boxes may continue iterating during processing of the requested operation.

FIGS. 7A-7C illustrate yet another illustrative form of animation that may occur in response to receiving a request to perform an operation upon the presented content, such as a cursor's selection of a selectable marker. In some instances, this form of animation may occur in response to a user choosing to close the displayed content within first screen area 204, such as an open application or electronic book. FIG. 7A begins the illustration by showing a cursor selection to close the open electronic book. FIG. 7B then illustrates that cursor 210 may undergo some form of animation in response. Here, an arrow 702 represents that cursor 210 may grow or expand in a downwards direction while the electronic book processes the command to close the electronic book. FIG. 7C finally illustrates that cursor 212 may expand to the bottom of screen 202 before or while the previously-open electronic book closes. FIGS. 7A-7C thus illustrate how animation of cursor 210 may give the user an impression of a "curtain close" in response to the user's decision to close the electronic book.

While multiple illustrative forms of animation have been illustrated and discussed, other forms of animation may also be employed and are also envisioned. Some of these forms of animation may notify the user that an operation, such as a user

selection, is being processed. This animation may also indicate to the user a position of the cursor once the operation has been processed and the displayed content has been altered accordingly.

FIG. 8 illustrates a process 800 for performing above- 5 described animations. Process 800 is illustrated as a collection of blocks in a logical flow graph, which represent a sequence of operations that can be implemented in hardware, software, or a combination thereof. In the context of software, the blocks represent computer-executable instructions that, 10 when executed by one or more processors, perform the recited operations. Generally, computer-executable instructions include routines, programs, objects, components, data structures, and the like that perform particular functions or implement particular abstract data types. These instructions may be 15 embodied as computer readable program code stored on a computer-readable medium. This computer readable medium may include, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital versatile disks (DVD) or other optical storage, magnetic cas- 20 settes, magnetic tape, magnetic disk storage or other magnetic storage devices, RAID storage systems, or any other medium which may be used to store the desired information and which may be accessed by a computing device. In addition, the order in which the operations are described is not 25 intended to be construed as a limitation, and any number of the described blocks can be combined in any order and/or in parallel to implement the process.

Process 800 includes operation 802, which displays electronic content. This content may comprise any sort of electronic content capable of being rendered on a display, such as each of electronic items 110. Operation 804, meanwhile, may display a cursor to select a portion of the electronic content, the cursor being located in a first position. Operation 806 represents receiving an instruction to move the cursor to a 35 second position, which may or may not be different from the first position. For instance, a user could select a selectable marker or a pop-up window could be displayed. Operation 808 then alters a shape of the cursor to indicate the second position. As discussed above, in some implementations the 40 cursor could grow and/or shrink to indicate this different position to the user.

CONCLUSION

Although the subject matter has been described in language specific to structural features and/or methodological acts, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described. Rather, the specific features and 50 acts are disclosed as illustrative forms of implementing the claims.

What is claimed is:

- 1. A method comprising:
- displaying electronic content;
- displaying a cursor to select a portion of the electronic content, the cursor being located in a first position;
- receiving an instruction to move the cursor to a second position; and
- altering a shape of the cursor to indicate the second position 60 in response to the receiving of the instruction;
 - wherein the altering of the shape of the cursor comprises extending the cursor from the first position to the second position.
- 2. A method as recited in claim 1, wherein a user of a device 65 that displays the electronic content triggers the instruction to move the cursor.

8

- 3. A method as recited in claim 1, wherein a device that displays the electronic content triggers the instruction to move the cursor.
- 4. A method as recited in claim 1, wherein selecting a portion of the electronic content with the cursor triggers the instruction to move the cursor.
- 5. A method as recited in claim 1, wherein displaying a pop-up box triggers the instruction to move the cursor.
 - 6. An apparatus comprising:
 - a display to present electronic content, the display comprising:
 - a first screen area to present the electronic content, the first screen area having a first refresh rate when altering the presented electronic content;
 - a second screen area to enable selection of one or more portions of the presented electronic content, the second screen area having a second refresh rate that is different from the first refresh rate, and wherein the second screen area enables animation in response to a request to perform an operation on the presented electronic content, wherein the operation comprises presenting a pop-up box in the first screen area; and

an animations module to enable the animation.

- 7. An apparatus as recited in claim 6, wherein the second screen area includes a cursor to select the one or more portions of the presented electronic content, and wherein the animation comprises growth of the cursor.
- 8. An apparatus as recited in claim 6, wherein the second screen area includes a cursor to select the one or more portions of the presented electronic content, and wherein the animation comprises reduction of the cursor.
- 9. An apparatus as recited in claim 6, wherein the second screen area includes a selectable marker to enable selection of the one or more portions of the presented electronic content, and wherein the animation comprises movement of the selectable marker.
- 10. An apparatus as recited in claim 6, wherein the second screen area includes a selectable marker to enable selection of the one or more portions of the presented electronic content, and wherein the animation comprises moving the selectable marker off of the second screen area.
- 11. An apparatus as recited in claim 6, wherein the second screen area is configured to include a selectable marker to enable selection of the one or more portions of the presented electronic content, and wherein the animation comprises presenting a selectable marker on the second screen area.
- 12. An apparatus as recited in claim 6, wherein the second screen area includes a selectable marker to enable selection of the one or more portions of the presented electronic content, and wherein the animation comprises shrinking of the selectable marker.
- 13. An apparatus as recited in claim 6, wherein the second screen area is configured to include a selectable marker to enable selection of the one or more portions of the presented electronic content, and wherein the animation comprises growing a selectable marker on the second screen area.
 - 14. An apparatus as recited in claim 6, wherein the second screen area includes one or more selectable markers to enable selection of corresponding one or more portions of the presented electronic content, and a cursor to select the one or more selectable markers, and wherein the animation comprises growth of a selected selectable marker.
 - 15. An apparatus as recited in claim 6, wherein the second screen area includes one or more selectable markers to enable selection of corresponding one or more portions of the presented electronic content, and a cursor to select the one or

more selectable markers, and wherein the animation comprises reduction of a non-selected selectable marker.

- 16. An apparatus as recited in claim 6, wherein the animation comprises an animated wait symbol.
- 17. An apparatus as recited in claim 6, wherein the second 5 refresh rate is faster than the first refresh rate.
 - 18. An apparatus comprising:
 - a display comprising:
 - a first screen area to display electronic content; and
 - a second screen area to display a cursor to select a portion of the electronic content, wherein a shape of the cursor changes responsive to receiving an instruction to alter a position of the cursor, wherein the change in the shape of the cursor indicates the altered position of the cursor, and wherein the change in the shape of the cursor comprises the cursor extending towards the altered position; and
 - an animations module to change the shape of the cursor responsive to receiving the instruction.
- 19. An apparatus as recited in claim 18, wherein the electronic content comprises a digital item.
- 20. An apparatus as recited in claim 18, wherein the electronic content comprises an electronic book.
- 21. An apparatus as recited in claim 18, wherein the change in the shape of the cursor comprises a growth of the cursor.
- 22. An apparatus as recited in claim 18, wherein the change in the shape of the cursor comprises expansion and contraction of the cursor.
- 23. An apparatus as recited in claim 18, wherein the change in the shape of the cursor further comprises the cursor contracting towards the altered position of the cursor.
 - 24. A computer program product, comprising: a computer usable medium having computer readable program code embodied in the medium for:

10

displaying electronic content;

- displaying a cursor to select a portion of the electronic content, the cursor being located in a first position;
- receiving an instruction to move the cursor to a second position; and
- altering a shape of the cursor to indicate the second position in response to the receiving of the instruction, wherein the altering of the shape of the cursor comprises extending the cursor from the first position to the second position.
- 25. A computer program product as recited in claim 24, wherein the altering of the shape of the cursor further comprises contracting the cursor from the first position to the second position after the extending of the cursor.
- 26. An apparatus comprising:
- a display to present electronic content, the display comprising:
 - a first screen area to present the electronic content, the first screen area having a first refresh rate when altering the presented electronic content;
 - a second screen area to enable selection of one or more portions of the presented electronic content, the second screen area having a second refresh rate that is different from the first refresh rate, wherein the second screen area enables animation in response to a request to perform an operation on the presented electronic content, and wherein the second screen area includes a selectable marker to enable selection of the one or more portions of the presented electronic content, and wherein the animation comprises moving the selectable marker off of the second screen area; and an animations module to enable the animation.

* * * *